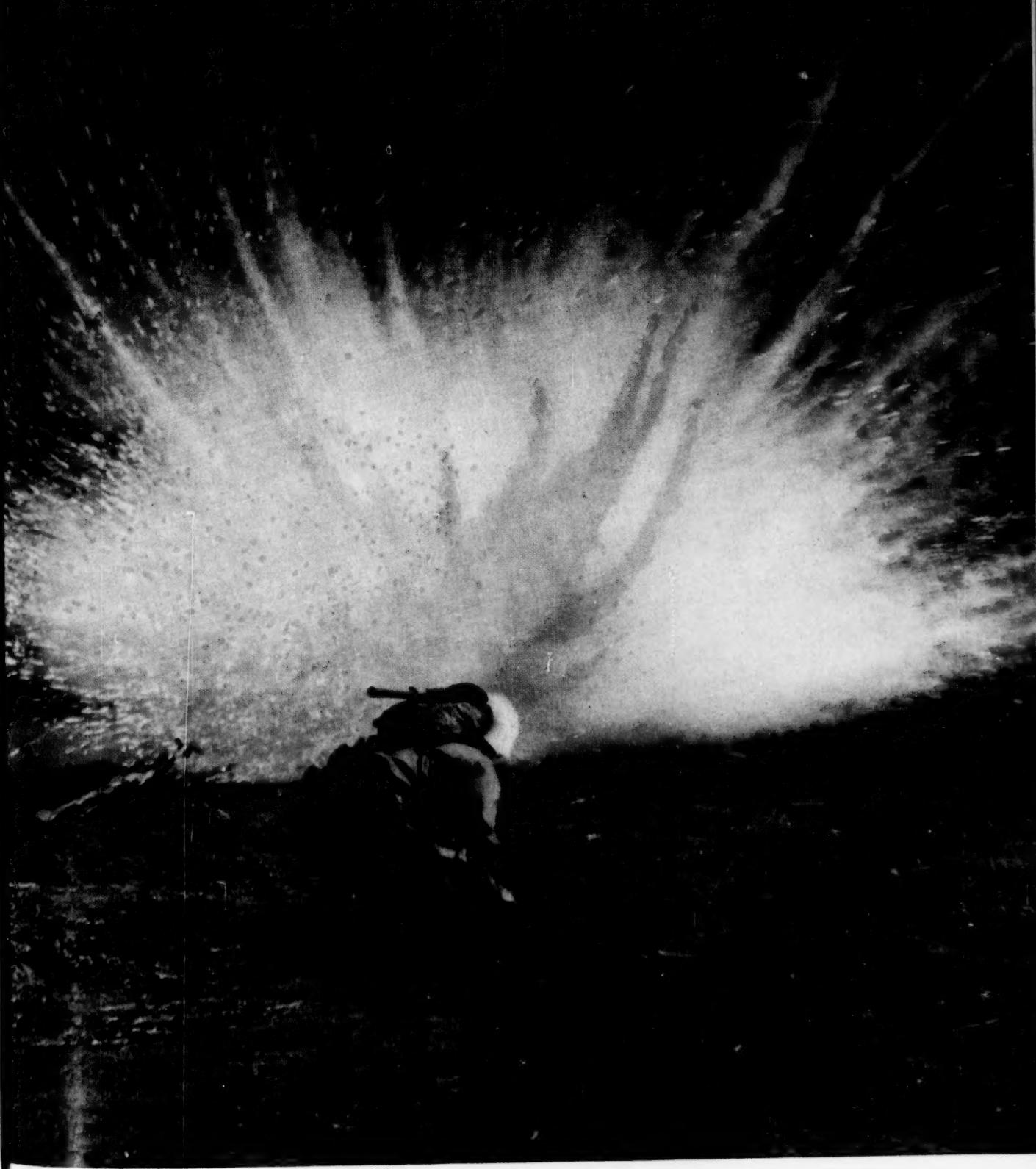


Marine Corps Gazette

JULY 1954

THIRTY CENTS



Arms For The Assault

Marine Corps Gazette

JULY 1954
NUMBER 7
VOLUME 38

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COVER

Though the pyrotechnic display depicted on the cover fits in very well with the tradition of fireworks on the Fourth of July, the Marine who heaved the white phosphorous grenade wasn't posing at the time the picture was taken. He was going about the very serious business of demonstrating how to take a fortified position. The shot was taken by 2dLt Jack W. Kroonen who was a student at Basic School at the time. Back cover: the three winners of the Lauchheimer Trophy competition in the Marine Corps Matches. Placing first, second and third — from left to right are Lieutenants R. E. Martin, W. W. McMillan and J. P. Taylor. This is the second consecutive year that Lieutenant Martin has won the Lauchheimer Trophy.



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Opinions expressed in the Gazette do not necessarily reflect the attitude of the Navy Department nor of Headquarters, United States Marine Corps

message center

Service Morale Not For Sale

... A great amount of comment has been made in the past year about service morale, officer and NCO prestige, and attractiveness of the service as a career. The number one panacea being advanced to better all of the above items is more pay. Certainly personnel of the Armed Forces are entitled to a decent standard of living, but this in itself will never build truly good morale or increased prestige. Such things cannot be bought. A hired soldier, mercenary, serving merely for pay, has never and will never prove his worth. The President of the United States reiterated that fact when he said in his State of the Union address that "pay alone will not retain in the career service of our Armed Forces the necessary numbers of long-term personnel."

Now the Marine Corps has been criticized for encouraging its officers to carry a swagger stick on appropriate occasions. The Marine Corps does not say that swagger sticks or such other impedimenta are the answer to attracting high quality personnel and a means of increasing morale. It is but one small step in the direction of instilling in its officers a command bearing. Nothing is to be gained by trying to disguise the identity of an officer and reduce all to a state of anonymity. The Doolittle Committee after WW II tried this with disastrous results.

The point is, that to build morale and prestige we need more leadership, tradition, pageantry, ceremony and, in plain language, color. These things give a sense of pride, a connection with the past, and a will to make the organization better in the future. Mr. Hanson Baldwin, in a very timely article, suggested that we bring back the bands, the parades and the tradition to help restore pride in one's outfit. How anemic, flat and uninteresting a military organization would be without color and tradition.

Our swagger stick critics say that we're archaic, are resorting to outmoded pageantry and have our heads in the sand when we indoctrinate our personnel with the traditions of the past in this atomic age. Maybe so, but let's take a look at the record: the Marine Corps re-enlistment rate is higher than any other service — July of this year will find a Corps of 100 per cent volunteers and a sufficient backlog of officer applicants for regular commissions now exists so that they can be selected on a very competitive basis.

These things were not bought with pay alone. Since time immemorial, Marine officers and noncommissioned officers have had the respect of the men they led. But they have achieved that prestige and maintained it by a positive, day-to-day application of leadership, not because they happened to have more material things of life or drew higher pay.

J. R. ANDERSON
LtCol, USMC

Ent AFB, Colorado

Too Much Stateside

... I succumbed to the recruiting sergeant's promise of "travel and adventure" during my Marine Corps

career and I'm still waiting for it.

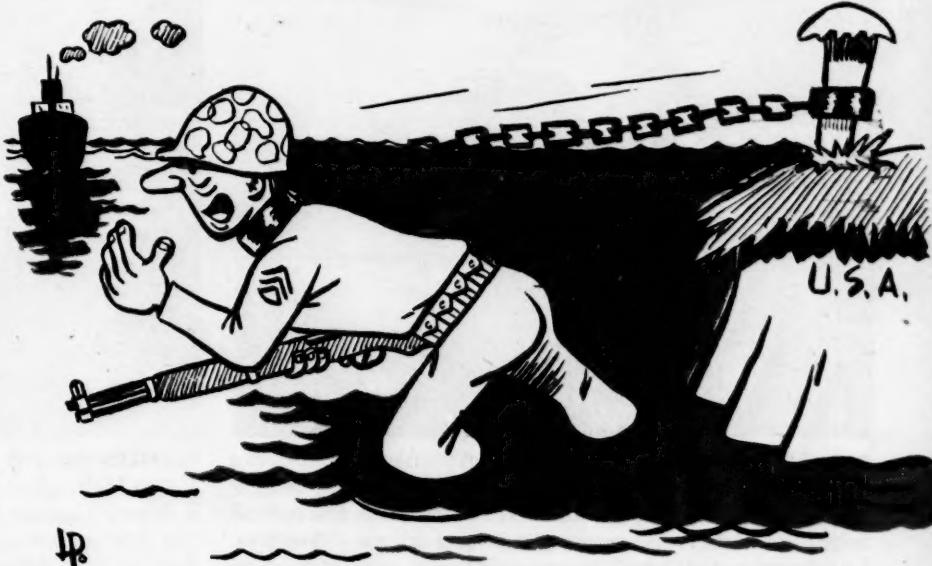
... I have five years in the Marine Corps and two more years to do. During that time, I have had no duty in the Fleet Marine Forces. I have completed three and a half years of Naval station and garrison duty in the States, plus 17 months of sea duty (of which eight months were spent in the U. S.). There are to be found numerous requests for foreign duty in my jacket at HQMC and as many rejections, but I believe that I could find personnel of my same rank and MOS who are going overseas and do not desire to go.

I recently learned that my next tour of foreign duty would be from four to six years from now. I came in the Marine Corps because I felt, and was told, that the Marine Corps was a force of professional soldiers of the highest caliber, to whom travel and adventure was a job. I am now faced with the prospect of sitting idly in the States in garrison for four to six years if I reenlist again.

Mine is not an isolated case, because I personally know quite a number of Marines who have left the Corps or who are going to leave for this same reason.

I feel that it would be more sensible to allow a man to return overseas for a second tour if he requested it than to send another overseas who wants to stay in the U. S. ... Were I controlling the assignments of personnel to foreign duties, I would have four categories:

(1) Personnel who have not been overseas, who request foreign duty.





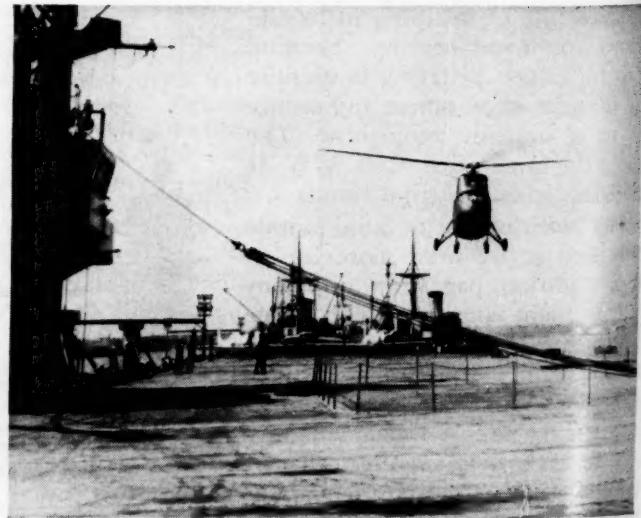
REPLACES BOATS—Newfoundland fishing areas are now patrolled by helicopter. The Fisheries Department of Canada operates this Sikorsky S-55, leased from Okanagan

Helicopters, Limited. The versatile S-55 does more effective work than the several boats it replaces, and is available for official inspections and any emergency use.

AROUND THE WORLD WITH SIKORSKY HELICOPTERS



PIONEERING AIRLINE—Mohawk Airlines has added a Sikorsky S-55 to pioneer scheduled helicopter passenger service on part of its certificated routes. It is the second scheduled American passenger airline to use Sikorskys. Large, twin-engine helicopters eventually may be used by the airline to replace some of its fixed-wing equipment.



COPTERS ON THE MOVE—First helicopter of the Army's 328th Helicopter Transportation Company comes aboard a Navy Carrier bound for Germany. The Company is the first such Army helicopter unit sent to Europe. Equipped with 21 Sikorsky H-19s, its mission includes medical evacuation, air supply and cargo or troop movement.



Army's
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Equipment
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ment.

WINGS OF MERCY—A Sikorsky helicopter, with rotors whirling, is shown in battle-torn Dien Bien Phu receiving French soldiers wounded in the heroic defense of the Indo-China stronghold. A stretcher bearer (right), rushes off for another casualty to be evacuated to a military hospital at Hanoi. The Sikorsky S-55 helicopter flew mercy missions in the thick of the Indo-China battle.



SIKORSKY AIRCRAFT

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(2) Personnel who have been overseas and who request foreign duty.
(3) Personnel who have not been overseas and request duty in the U. S.

(4) Personnel who have been overseas and request duty in the U. S.

Preference for assignment overseas would be in that order.

I feel that in this manner, more men would be assigned to duties of their personal preference, thereby keeping with the policy of the Marine Corps that each man is an individual.

CLIFFORD R. ROBINSON
SSgt, USMC

Little Creek, Va.

Aiming Posts

... It seems to me that the Corps could save money and time by issuing a different type of aiming post for use with 60 and 81mm mortars. Very often, the tips on the stakes in use at the present break off or become bent.

I would suggest using a threaded cap with the tip cast on it, or hollowing out the end of the stake and using set screws to hold the tip in place. Then when tips are bent or broken, they can be changed by the company armorer and it wouldn't be necessary to survey the entire stake.

RUSSELL C. LEONARD

Cpl, USMC

Korea

ED: *The suggestion proposed by Corporal Leonard has been in effect for some time. MCEB reports that aiming posts are issued with each mortar . . . and the M10 aiming post, made of steel, is manufactured to receive an alidade. . . .*

In view of the higher cost of the M10, provisions have been made to provide replaceable points and set screws so that repairs may be made. . . . These spare parts . . . are requisitioned from an ordnance depot as they are needed by an organization capable and authorized to perform field maintenance.

The suggestion . . . that the company armorer make the needed repairs . . . is impossible under the present supply procedure. The company is not authorized the parts. . . .

. . . If Corporal Leonard is advocating the use of replaceable tips on wooden aiming posts, it is believed that the end result would not justify the cost . . . such action would result in the addition of more spare parts to an already overburdened ordnance supply system, and that neither time nor money can be saved.

SRBs and Jackets

... I have seen changes in the service record book and officer's file jacket . . .

The old enlistment-induction contract of the record book contained the height, weight, vision, hearing and scars on an individual. The present SRB fails to indicate this information and hampers the administration of an unit [since] HQMC assigns quotas to commands to fill a billet with an individual of specific physical requirements. Units must then refer to the Dispensary . . .

Another suggestion is the insertion of an allotment page in the present officer's jacket. . . . An allotment should be accomplished by the disbursing officer on all officers. However, this is not always possible, especially in the smaller commands away from the parent organization . . .

TONEY J. CIPRIANI
Sgt, USMC

Pueblo, Colo.

Shooter's Lament

... Colonel R. M. Wood's *Shooters Are Made—Make 'Em* in the May issue concerns a long neglected problem. I concur 100 per cent with the Colonel and I'd like to add that annual requalification is also looked upon by many officers as a "necessary evil."

Each year I have asked to participate in Division Matches only to be told "sorry, we're under T/O strength, wish we could let you—maybe next year" or something similar.

Would like to see Captain Fredricks, the author of *Targets* in the March issue, and Colonel Wood,

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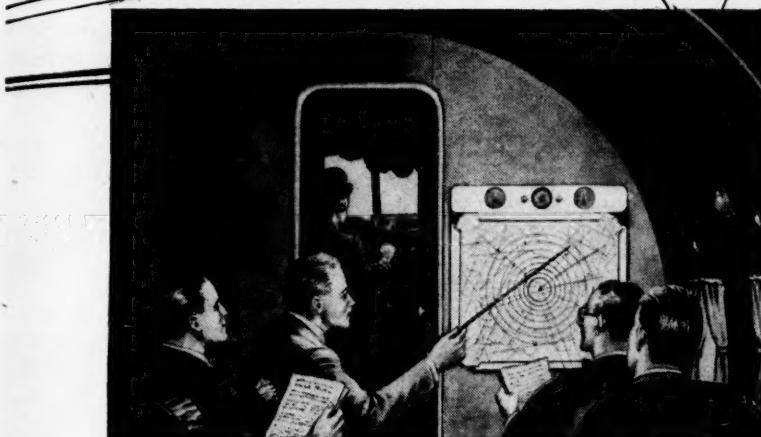
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AUTO IN U.S. AUTO OVERSEAS PERSONAL PROPERTY



Perhaps most widely-known at this time of all aircraft navigation aids pioneered by IT&T scientists is ILS (Instrument Low Approach System). Radio beams of ground transmitters activate two needle pointers on the plane's indicator. When both are perfectly centered, the pilot knows he is directly in the center of the approach lane, and at the right angle of descent for a perfect landing.

... many of tomorrow's navigation and communications devices now being designed by IT&T for aircraft safety and efficiency.

The interior of the "Flying Laboratory" of Federal Telecommunication Laboratories, a division of IT&T, is a veritable airborne workshop. Here, navigation aids for use at short and very long distances as well as for low approach and landing, and many other experimental radio and electronic devices are put through their paces under "in-service" conditions.

Since the early days of flight, IT&T research has made many contributions to safer, more dependable flying. It began with the world's first instantaneous direction finder. It continued through ILS, air-to-ground radio, VHF airport direction finders, and greatly improved VHF omnidirectional radio range (VOR).

Today, Navarho, Navascreen, two-color radar and Moving Target Indicator Radar promise great benefits for aircraft traffic control. And very important is IT&T's newest crystal-controlled distance measuring equipment (DME) which, in combination with VOR, tells the pilot with uncanny accuracy his distance and direction to or from a known ground station.

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unite and get a marksmanship program in progress that would make every Marine an inevitable winner on any range or battlefield.

HARRY R. TAYLOR
SSgt, USMC

Norfolk, Va.

Appreciation Certificate

. . . My proposal is this: Since certificates of appreciation are awarded to civilian organizations for valuable service rendered, why not award a similar certificate to a man who has completed 20 or 30 years faithful service, and is retiring from the Marine Corps?

This could be done with very little cost to the government and I feel that a certificate of appreciation signed by the Commandant of the Marine Corps would be treasured and displayed with the greatest of pride by the men who have given so much of their lives to the profession of being Marines.

LOUIS SANDORELLO
MSgt, USMC
Philadelphia, Pa.

Recruiter's Suggestion

. . . It is obvious to some of us that Marine Corps Boot Camp training is much easier, as far as discipline is concerned, than it was a few years back. Yet, to a lot of young men it is the most terrifying ordeal that could possibly happen. I am referring to young men who are about to enlist in one of the branches of the armed forces.

After only eight months of recruiting, I sincerely believe that if the ten-day leave, immediately after Boot Camp, were changed to possibly ten or 15 days following completion of a school or advanced infantry training, Marine Corps enlistments would be favorably affected.

It seems to me that if a short period of more relaxed training were given (even though it was rigid) where the men were allowed to take advantage of liberty and more free time, that some of their hair-raising stories would be at least counterbalanced a little by some good liberty or duty they enjoyed shortly after Boot Camp.

I certainly am not in favor of relaxing disciplinary training in Boot Camp, but I do believe a man should

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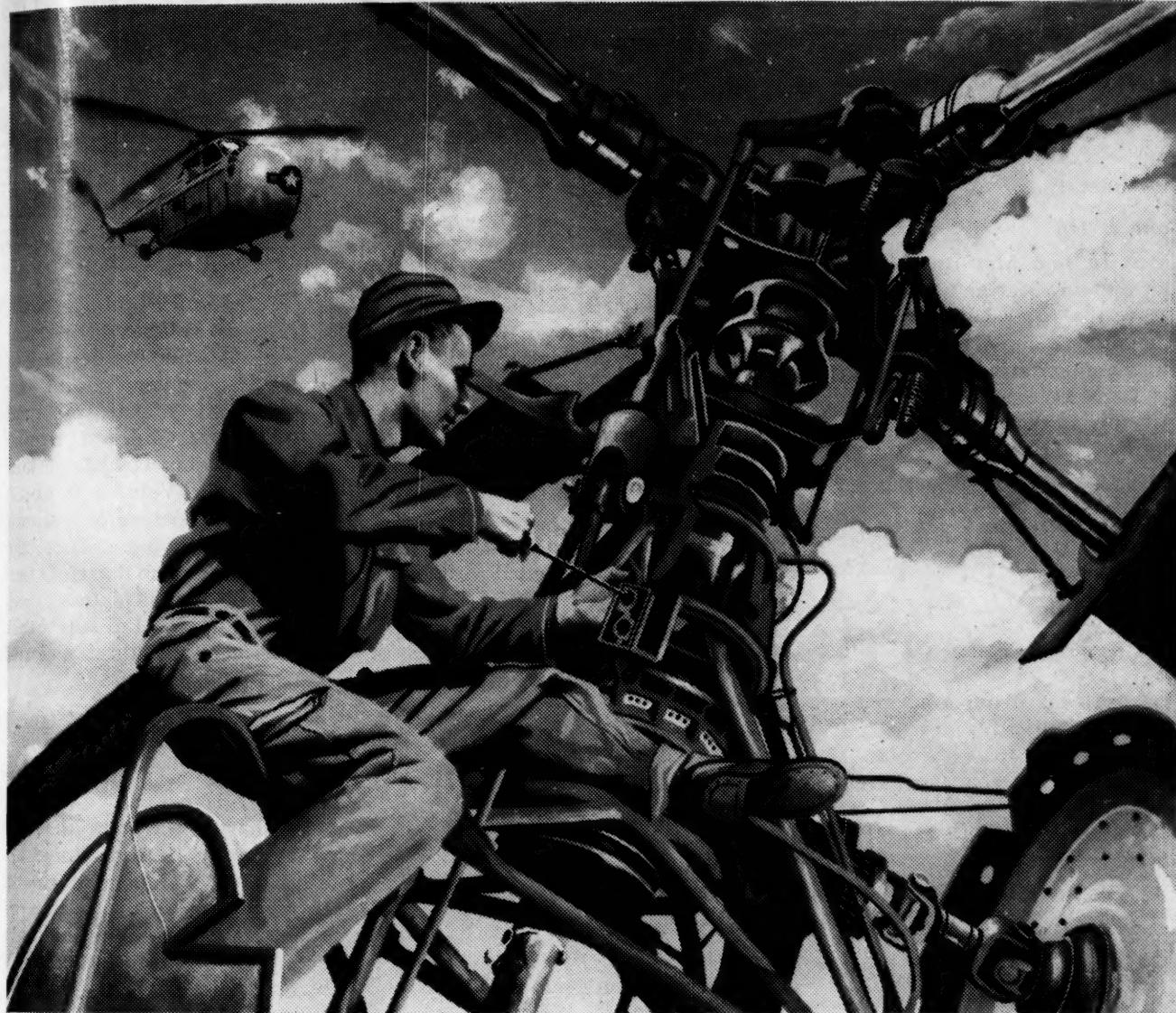
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Overhauling the motor of a giant Marine Corps helicopter used to hasten troop movements.

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be required to perform some type of duty for an indefinite, but short period following his completion of recruit training, before being granted a leave.

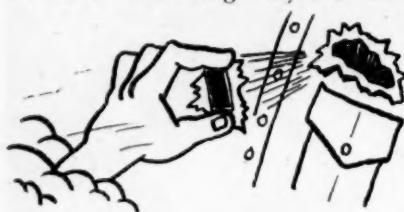
C. W. CLINGMAN
SSgt, USMC

Vincennes, Ind.

Take It Off

. . . In your May issue you state that the only Marine Corps units to receive the Army Unit Citation are Companies B and C of the 1st Tank Bn, the 4th Marines, VMF 541 and the 1st MAW.

If this is true, then some 2,000 Marines, including myself, have



been wearing an unauthorized citation for the past few years.

I would like to bring to your attention a War Department General Order No. 153 dated 18 October 1946 which cites VMF 115, 211, 218 and 313.

Note: The above citation authorizes the Army Distinguished Unit Badge.

JOHN M. LOMAC
Major, USMC

Philadelphia, Pa.

ED: If you're wearing the Army Unit Citation then you and the 1,999 other Marines had better take it off. The Head, Decorations and Medals Branch, HQMC states that War Department General Order No. 153 was later cancelled by General Order No. 20, Dept. of the Army. The Secretary of the Navy requested the cancellation in order to avoid duplication inasmuch as the Navy Presidential Unit Citation was awarded to MAG 12, which was comprised of VMF 115, 211, 218 and 313.

LETTER WRITERS

Please keep your Message Center contributions limited to 200 words or less. If you find that the muse woos you to greater lengths, write an article on the subject. We'll be glad to consider it for publication.



How to Win Friends

. . . It is my opinion that before troops are sent into a foreign country they should be given some instruction on how to conduct themselves.

A course of instruction could be established and called, "Personal Conduct in a Foreign Country." I believe that it should be started in Boot Camp, and continued throughout a man's career, just as instruction on the M-1 rifle or in field sanitation. The course would show the individual Marine that the people he comes in contact with in foreign countries have feelings the same as people here. He would also be taught that he is a representative of the United States, and that in the eyes of the natives he is an example of all Americans.

ALAN W. BRIDWELL
TSGt, USMC

Mankato, Minnesota

One Manual — One Way

. . . Often when troops are required to display clothing and equipment they are confronted with a problem. Every officer and NCO has a different book. According to Marine Corps General Order #83, the *Landing Party Manual* is the "Bible" of the Corps. Many a Marine has purchased the LPM and has never received a printed change. Then he finds that he has been passing out bum dope for the last six months. Why can't we eliminate all the manuals that we now have and originate one manual? Let it be known that no deviations will be permitted unless a printed change originates from Headquarters Marine Corps.

Actually, this would not be a big problem. Marine Corps administration policies do not fluctuate. In this respect we are guided by one manual: Marine Corps Manual Volume I, II and III. We have no so-called "Ground Rules" to contend with.

The manual which I propose could be divided into volumes. For example: Volume I could be devoted to drills and ceremonies, various layouts, general orders for sentinels and guard procedure, uniform regulations and other subjects that pertain to garrison life. Volume II could consist of nomenclature of weapons including functioning. Also, the tactics, techniques and doctrines pertaining to the squad, platoon, company and battalion. I'm sure other NCOs and officers would like to add their suggestions to mine.

JOSEPH J. BLANK, JR.
TSGt, USMC

New Haven, Conn.

Inside or Out?

. . . I have always felt that the thing keynoting the impressive appearance of the average Marine is that aura of conscious neatness he has about him. With a professional's candor concerning his own tribe, I definitely feel the existing order directing troops to place the utility jacket inside the trousers detracts considerably from his appearance.

Thin or girthy, Gary Cooper tall, or squat as a butter tub, still each Marine has had to experience the jacket's perverse talent for creeping forth to form a sort of semi-pinafore around his middle. The pockets are forever in view but useless, and in summer heat the rig takes on the feel of a canvas belly band. The efficacy of the order under battle conditions is obvious, but it would be pleasant and immeasurably neater if a modification of that order, as concerns day-to-day operations, could be worked out.

FRANCIS J. O'NEILL
TSGt, USMC

Havelock, N. C.

ED: Your problem, and the problems of other Marines (large or small, thin or girthy) should be solved since the advent of the new utility clothing. (In Brief, July '53)



Good News for Telephone Users

FEDERAL EXCISE TAX
ON LONG DISTANCE
REDUCED
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The reductions went into effect on April 1 and apply to service billed to you on or after that date.

Now it costs you even less to keep in touch by telephone.

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Our authors

• Naval Correspondent and author, **LCdr Trevor Blore, RNVR**, presents *The Queen's 'Copters* (page 52). Commander Blore was graduated from Wesley College, Melbourne, Australia in 1918, and the Royal Australian Naval College in 1922. He resigned his commission shortly



LCDR BLORE

after and pursued his writing career through Australia, England and with the Kansas City Journal-Post in the United States. He returned to the Royal Navy Volunteer Reserve in 1940 and was commissioned a lieutenant. After a year of anti-submarine escort duty the Commander was appointed to the Admiralty for Press Relations duties and later served with the Staff of Commander-in-Chief, Mediterranean, working closely with the USN on amphibious operations.

• Captain John E. Greenwood's interest in conservation stems from observation of the salvage operations from July to September 1953 in Korea, and from WW II production cost reports. Realizing the great need for a conservation program he wrote *New Principle* (page 12). The Captain came into the Marine Corps in 1945. After "boot camp" he entered the Naval Academy Preparatory School and then to the Naval Academy, being graduated in



CAPT GREENWOOD

1950. Next came Basic School at Quantico, and then two years with the 8th Marines at Camp Lejeune. Just recently returned from Korea, the Captain is presently assigned to the English, History and Government Department at the U. S. Naval Academy, Annapolis, Md.

• Lieutenant Colonel Carl W. Hoffman has a Silver Star medal and two Purple Hearts to prove his qualifications for writing the official histories of the Saipan and Tinian operations. The other two stars on his Pacific ribbon represent Guadalcanal and Tarawa. The Colonel came



LTCOL HOFFMAN

into the Corps through the PLC program after graduating from Drake University in 1942. After his tour in the Pacific, he was at The Infantry School, Fort Benning, and from there went to Historical Branch G-3, HQMC. His last duty station before being transferred to the 1st Marines in Korea was as Officer in Charge, Marine Corps Recruiting Station, New York City. The Colonel's article *I'd Had It* appears on page 29.

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• To choose a subject like gunstocks and come up with a well written, interesting article is a difficult assignment, but



1STLT LOUGHLIN

1stLt Donald J. Loughlin has done just that with *High Priority Wood* (page 46). After entering the Corps through the University of Pennsylvania's NROTC program in 1952, the lieutenant attended Basic School at Quantico. His first assignment was as a student at Fort Knox's Armored Maintenance and Motor Transport Officer Course. He served with the 2d Tank Bn at Camp Lejeune for a year before being transferred to the 3d Tank Bn where he is currently serving.

• Lieutenant Colonel S. H. Fletcher is the author of *Arms for the Assault* (page 23). Colonel Fletcher entered the Naval Academy from Texas A&M College in 1938, and was graduated in 1941. He was with the 2d and 8th Defense Battalions on Samoa and Wallis Island in 1942 and from there went to the Artillery Training Regiment at Camp Pendleton. From 1943 until 1945 the Colonel served with both the I and V Amphibious Corps, and later commanded the Marine Detachment at the U. S. Naval Academy. Later assignments took him to Service Command FMFPac; MCS, Quantico and to the G-4 Division, HQMC. He is presently serving with the 3d Mar Div stationed in Japan.

• Colonel W. F. Prickett entered the Marine Corps in 1937 from the University of Oklahoma. After completing Basic School, he served aboard the USS Maryland, and later with the 6th Marines. While serving



COL PRICKETT

on Corregidor with the 4th Marines, the Colonel was captured by the Japanese and held prisoner for four years (1941-45). He served two-year tours with the 8th Marines; as Provost Marshal at MCS and with the 6th Marines before going to Korea in 1952. Colonel Prickett wrote *Economy in Writing* while serving as Assistant Director, 5th MCR&RD. He is presently Inspector at MCS, Quantico.

• Captain William J. Davis issues a defense for the mortar in *Fire For Effect* on page 16. Captain Davis attended Bloomsburg (Pa.) State



CAPT DAVIS

Teachers School as a member of the V-12 in 1944, and when the program terminated in 1945 he transferred to Penn State where he majored in Journalism. He entered Basic School in 1947

through the NROTC program. From 1948 until he left for Korea in 1950 for duty with the 7th Marines, the Captain was at Guam on two different occasions; with the Embassy in Nanking, China; Camp Pendleton and at Naval Supply Depot, Ogden, Utah. He is presently preparing lesson plans for the Platoon Leaders Class, MCS, Quantico.

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FAIRFIELD FAMOUS NAMES

IN JET ENGINE MANUFACTURE

CONTINENTAL

CURTISS-WRIGHT

PRATT AND WHITNEY
AIRCRAFT

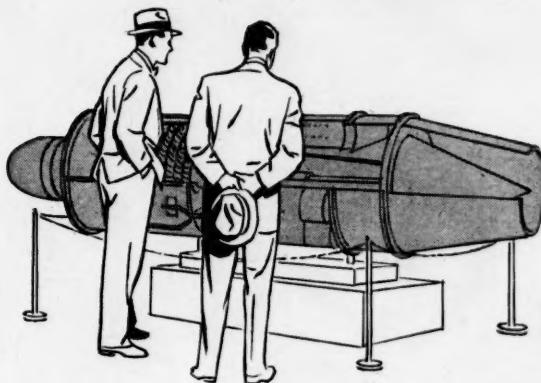
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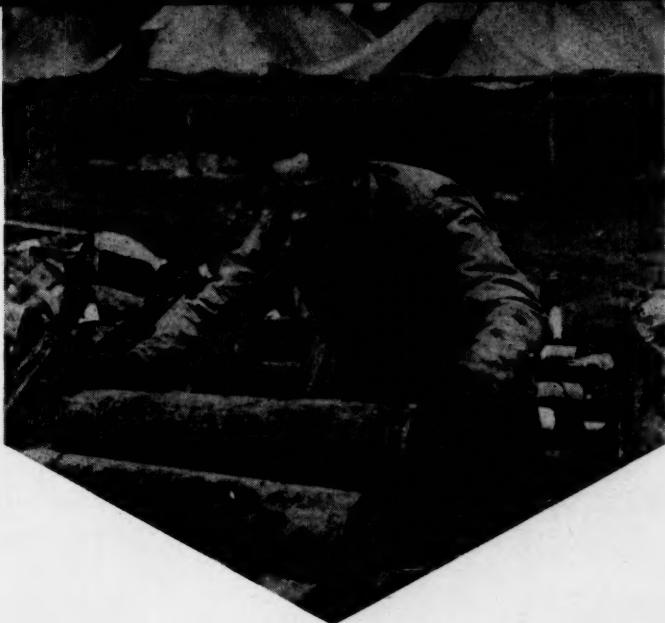
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If we are to succeed in the 20th century we must add a new dimension to the present Principles of Progress. Conservation





WARFARE IS NO LONGER A MERE conflict between two armies. Modern war is waged by industries and by entire peoples. It is, in truth, a struggle between national economies. War has become a giant, and trailing along after its tremendous growth has been man's understanding of it.

For centuries man has sought the answer to the questions of why and how military action is taken. This search has resulted in the discovery of a set of facts we have termed "Principles of War." These principles have been applicable to every conflict for centuries and the proper consideration and application of them has, in almost every case, meant success.

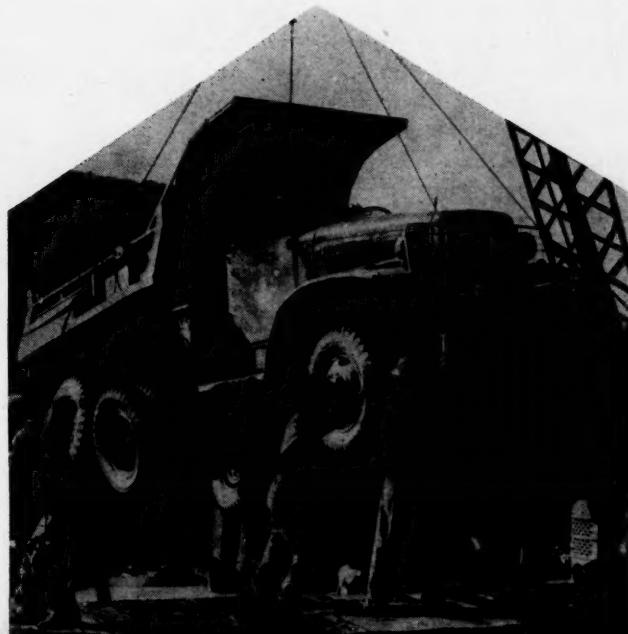
Today, these same principles apply just as they did thousands of years ago. We know, however, that the past 400 years have seen an unbelievable growth in the art and science of warfare. This growth raises an important question.

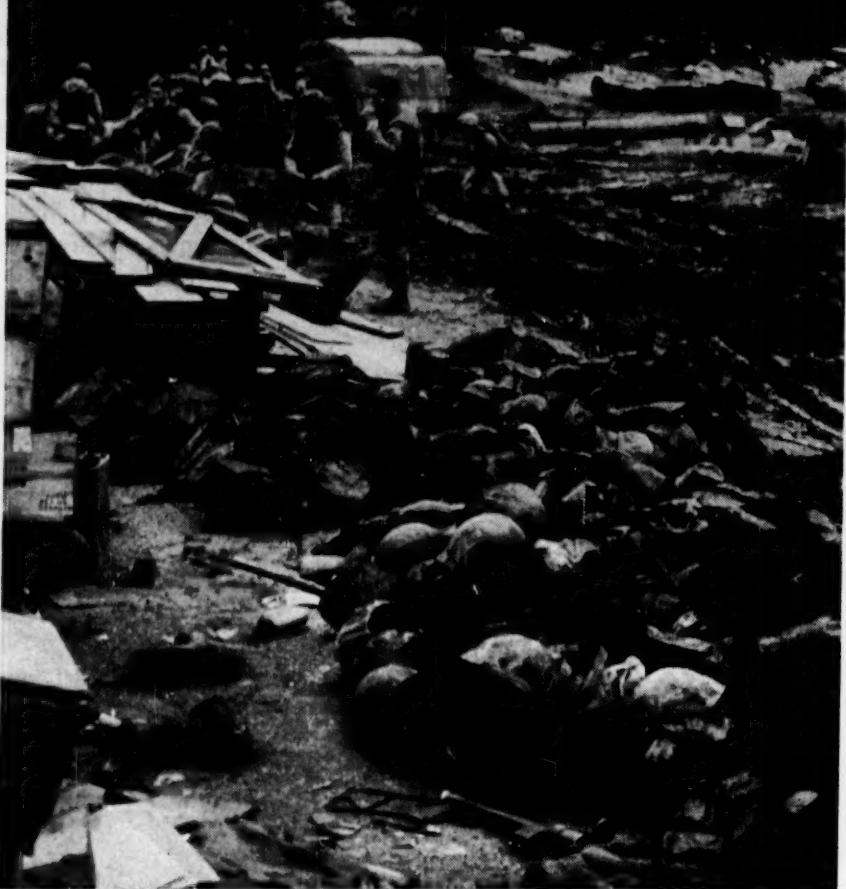
Could there be a new principle that stems directly from this modern "national economy" type warfare — a new principle that has little or no bearing on ancient battles, but is of vital importance today and is destined to remain vital in all future wars? If such a principle exists, it would behoove us to study it carefully.

The wars of the 20th Century have presented their participants with many new problems. These problems are peculiar to modern warfare and were born with it. They will continue to grow and become more demanding as long as the development of modern military technique continues.

World War II brought with it a rude awakening from the popular delusion that we are a nation of unlimited resources. Unfortunately, it was a lesson many of us chose to ignore. Very early in the war we found the needs of the Services unsatisfied because of slow production and material shortages. Copper and its alloys were critically scarce. Rubber, nickel, chromium, vanadium, manganese and silicon soon became even more crippling shortages. In addition to natural resources, we lacked manpower and we lacked time. Our entire economy was faced with problems very similar to those

A NEW PRINCIPLE





Misused and discarded equipment—a tremendous drain on economy

confronting Germany in World War I, and we solved them by the same method tried by Germany two decades earlier. This solution was conservation of natural resources, manpower, production facilities, time and existing military equipment—in short, conservation of every component of our national economy.

The problem was this: To fight a total war, our armed forces needed equipment and munitions of every type. Our economy had to produce these materials and it had to produce sufficient manpower for the services as well. A simple military and industrial mobilization was not enough. If we were to meet the demand for military goods, far more drastic steps had to be taken. Substitutes had to be developed for scarce materials, production methods improved, equipment redesigned to permit less costly and wasteful production. Salvage programs had to be inaugurated and the services had to utilize their equipment more fully if we were to meet the material requirements of the armed forces. The execution of these measures amounted to the application of the principle of conservation.

Should another war break out, these same problems, magnified many times, would again confront us. The armed forces would need more material and manpower than ever before. To this fact, we can add the real possibility that many of our vital production centers may be destroyed in the initial act of aggression. We can be certain, that with the advent of another war, this principle would take on a fearful importance for every American.

The United States commitment in the Far East, the possibility of our becoming involved in other limited wars and the current need for large military forces present the same fundamental problems. Today our entire economy is engaged in a struggle with Communism. Of necessity, we must maintain greater peacetime military strength than ever before in our history. It is the size of our military budget that puts the pressure on our economic life. The principle of conservation is one means by which our country will be able to solve its major problem of maximum defense with minimum economic drain. It is a problem requiring serious thought by every

citizen, for it is easier to foresee total war than peaceful conditions where extreme military preparedness is no longer a necessity.

Even without total war, it is apparent that conservation will reflect directly on our national strength and our state of readiness. If we can actually understand this new principle and apply it wisely, our strength will be measurably increased. We should make every effort to practice conservation up to a point where any further efforts would result in reduced efficiency.

To get a better understanding of this new principle, we can turn to industry and its problems during World War II. From 1941 to 1945 American manufacturers were forced to practice conservation. As we have seen, they were compelled to find substitutes, to redesign equipment and to invent new production methods. Then they had to down-grade many items in order to overcome acute shortages of manpower, time, production facilities and materials.

In 1943, when the shortage of brass was most critical, industry figured out a new design for a brass primer case, weighing only .0625 pounds. This resulted in 11,676 tons of brass being saved on its production that year.

The carbine is another good example. By redesigning the carbine sight, its cost was cut from \$.85 to \$.45. The trigger housing group was studied and finally redesigned so it could be stamped out rather than forged. On a single order of these, 720,000 working hours were saved and a large number of milling, broaching and profiling machines were released to other work.

These illustrations point out two things. They bear testimony of the dangerous shortages that faced the United States in its attempts to mobilize for World War II. These shortages would be many times more critical if total war were to occur again. Secondly, they hint at a subject which Army Ordnance has aptly termed "Tremendous Trifles."

A fraction of an ounce saved here, a few seconds someplace else, a step in the manufacturing process eliminated there—when multiplied by the needs of the services, amounts to tons of material, millions of dollars and thousands of man-hours. It is

with this business of tremendous trifles that the military man is vitally concerned.

A canteen, a cartridge belt, a few rounds of ammunition, a hand grenade or a bayonet are not particularly expensive items. But should each squad or even platoon in the Army and Marine Corps lose or damage just one per unit, it would soon become a very big and very expensive loss. It would mean more raw material, more manpower, more shipping space and more money out of our military budget for which there is no positive gain in terms of strength or efficiency. It is very likely that we can get by this year and next without changing our attitude toward equipment, but the day of reckoning will certainly come. The strain placed on our economy by defense spending is cumulative, and in addition to that strain, we lack the room for expanded industrial output that existed in 1939.

Most of us believe we know a great deal about supply economy and economy in management. We have at sometime or other in our military careers, undoubtedly, given lectures on these subjects. We feel we do all we can to take care of government equipment. With little difficulty, however, we can find many examples to indicate that our smug feeling is not justified. In reality, we are not practicing conservation to the extent we should.

During the Korean MLR Salvage Operation conducted in July, August and September of 1953, the quantity of misused and discarded equipment recovered was beyond belief of anyone not a witness to it. Space heaters, rations, canteens, special service equipment, weapons, utilities, winter service greens—in fact nearly any item of equipment ever issued turned up someplace along that line.

The black market in Seoul was another indication. Coleman lanterns, Coleman stoves, side curtains for jeeps, clothing and a few dozen other items which were unavailable or difficult to obtain through supply channels could be purchased in any number of shops in Seoul. Some of the items were new, others remade, but all bore the mark of United States' government property. The existence of this black market

was proof of the weaknesses in our system yet to be corrected.

We can find a third good example in our own outfits. No matter how much supply economy we preach, when it gets right down to our own unit, things are a little different. We carry a neat supply of extras in our storerooms (but not on the books), just in case we might need them. We go to bat for our men and try to get all the gear we could possibly use or want. Frequently we carry the policy of "nothing's too good for our outfit" to a point that amounts to real waste.

Military leaders should take stock of their own conservation program. By examining our past efforts in three fields, we should determine whether we have actually applied this principle or merely paid lip service to an idea we feel applies only to other people. The first and biggest field is "Supervision." How many times have we given tacit or open approval to wasteful or destructive practices? Do we really insure that every item from paper clips to tanks are properly cared for and utilized to best advantage?

This type of supervision is everyone's responsibility: no item is too insignificant for attention.

In a like manner, we should investigate our plans and program for "Salvage." If every unit from the squad on up would adapt a positive salvage program for communications wire alone, the yearly savings would be tremendous.

The third field can best be termed "Suggestion." Many of us feel that certain items of equipment need revision. We complain about packs, ponchos, canteens and carbines being useless or poorly designed. Equipment that will better suit our

needs and be less susceptible to loss or damage could be developed, we feel. The Marine Corps has excellent facilities to get this type of equipment for us, but it takes suggestions, ideas, study and field tests, however, before changes can intelligently be made. We should practice the positive approach and swamp the Equipment Board with our ideas rather than just airing them in the bull sessions.

The responsibility for the practice of conservation lies on every component of our population—industrial, civilian and military alike. Today, the world is divided into two armed camps and the division of natural resources is more nearly equal than ever before in the history of war. From every indication, the need for a powerful military force will continue to put a tremendous drain on our economy.

Our present motto of "Easy and Comfortable Living" does not lend itself as readily to saving material as Russia's motto of "Sacrifice and Toil."

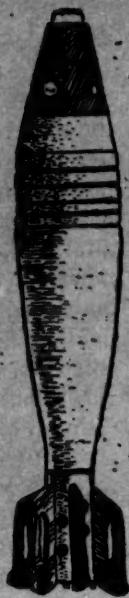
With each year the importance of conservation grows. In time of peace the degree to which we can practice it will serve as a measure of our power. In time of war, conservation will serve as a vital factor in determining the victor. By following this new principle, the Marine Corps will maintain its outstanding record of fielding a better combat man at less cost than any other service. Conservation has proven itself. It is a 20th Century principle of war. Have we given it enough consideration? Have we checked up on our three S's—Supervision, Salvage and Suggestions? Do we watch for "Tremendous Trifles?"

USMC

Seoul markets . . . U. S. Government property



Fire For Effect!



By Capt. W. J. Davis





'A rifle company without its 60s or an infantry battalion without its 81s would be as out of context as a Marine Corps Birthday party without a cake!'

As I READ LTCOL WADE'S PRIZE-winning essay, "Of Mortars and Men," in the January issue of our professional magazine, my ears suddenly started to pick up the strangest sounds.

"Whatever is the matter, Bill?" asked my wife.

I tipped my head, pounded one ear like a Recon man emerging from a long dip in the briny, and laughed back, "I would have sworn I just heard a few of old Lou Diamond's choicest phrases. Or maybe it was just a bunch of Chinese mortarmen laughing in the distance!"

Yes, indeed, I'm more than sure that the Reds' translated copy of the Colonel's article delighted the cockles, or should I say rice-icles, of their little red hearts!

It looks like the "big picture" manner of fighting is really getting big—a little too big for the gravel-cruncher to comprehend.

It also looks like the old rifleman, if he isn't being written off as I write this, will be all alone—alone with a few artillery FOs all along the miles in front of the battery positions. So while we're conserving manpower, why not teach the rifleman to be FO and we can go all out on the economy yardstick?

Yes, indeed, no sense in knocking out that enemy machine-gun 100

yards to our front from this defilade with one of our tried and trusty \$4.70, 60mm mortar rounds when we can call up, by means of a six-man FO team, 20 or 30 of those delightful little \$113.00-each, 105mm rounds with VT fuses! Or do you think that Chinese Maxim would be a good test for one of our baby A-bombs, now that we are really going to economize on manpower?

Then again, if the 81s and 60s are really so dangerous and inaccurate, think of how dangerous and inaccurate that weak-looking shooting-stick in the rifleman's hands must be. I understand the Reds have such terrific radar that they can pick out one of our rifles or machine-guns, while it is firing, without even turning the set on. Say, I've got another idea—of course it might shake up the soldier-sentimentalists a little bit—but why not get real economical and cut out all the billets in a division for the inaccurate and dangerous riflemen and machine-gunners—(I understand one Marine shot off his toe on the range at PI back in '07, which proves to any up-and-coming Marine that the weapon is definitely not safe!) In this manner we can save some 13,432½ billets in a division. Then we can multiply that by three, for the three divisions, and we've really got something!

Then the battery-ites would get a real chance to use the heavy machine-guns they've been carrying around all these years! And what do they carry them on—trucks. And why does the rifle company have such a rough time supplying its 60mm section? Because it doesn't rate any trucks.

Let's see now, if we don't use a mortar round for that target, we'll have to use artillery, which means more trucks to carry those \$113.00, VT-fuzed rounds. By the way, how much did you say that those 6x6's cost?

The foregoing is a bit hypothetical you think?

Realistically, a rifle company without its 60s, or an infantry battalion without its 81s, would be as out of context as a Marine Corps Birthday party without a cake!

In rebuttal of the "objective approach," let me cite a few very first-hand instances whereby certain well-qualified FOs (whose beloved radios managed to die at crucial spots when we were on the move to, around and from the Reservoir) did everything but kiss my equally-beloved mortars and mortarmen. Our mortars needed no radios or wire—nothing but a loud Marine voice and some nimble-brained and nimble-fingered young men!



No cold weather maintenance problems

I'm sure we're all aware that each of the mortars is known as the "weapon of opportunity" for the commanding officer of the organization of which it is a part—the 60 for the captain, rifle company commander; the 81 for the lieutenant colonel, infantry battalion commander; and the 4.2 for the colonel, regimental commander.

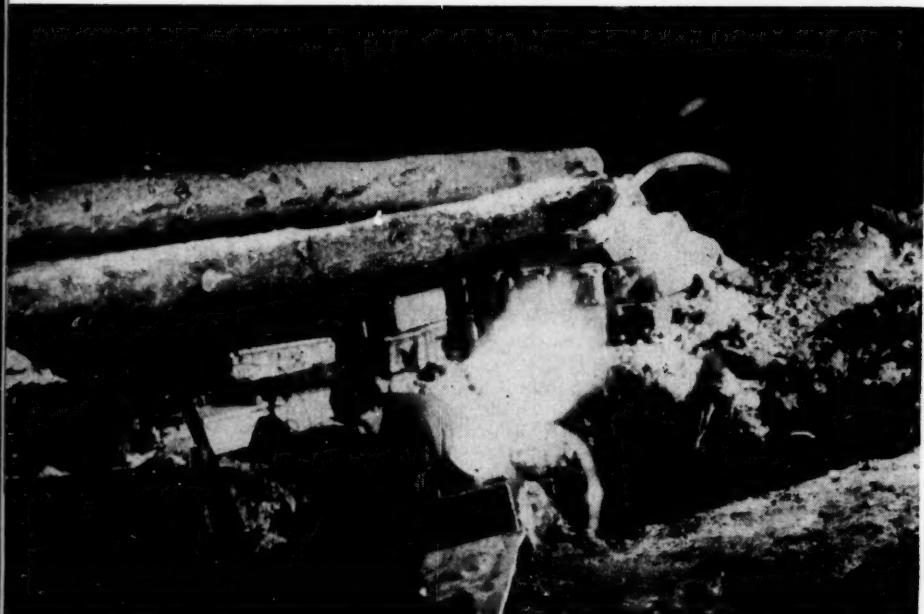
As such, each of the above commanders can call down these fires on a moment's notice because the mortars belong to him alone. There is no chance that they might have been "loaned out," temporarily, to some other organization, as are the other "big guns" (i.e., artillery, naval gunfire and air). They won't be busy when needed by the parent organization during an emergency. I saw numerous examples of such loan-outs in the spring of '51, when

we called for Marine air only to find it had been "loaned out" to other United Nations units. With the mortars, this situation does not occur.

Another problem we experienced quite often, especially during the breakout from the Reservoir, was the heart-breaking ability of the radios to function beautifully until we really needed them. Then, you guessed it, they broke down completely! So many times, especially in bad weather, our radio contact with air, artillery, 4.2s and even the battalion 81s was broken.

Perhaps these fairly constant mis-haps beat into my skull the military version of "a bird in the hand is worth two in the bush." I know that when orders return me to some combat zone as a rifle company commander, I'll see to it that my 60s are

Ballistically deficient . . . or deadly efficient?



always ready to go. I've seen too many other company commanders who were prone to use artillery, air, and naval gunfire almost to the complete exclusion of the 60s, 81s and the 4.2s.

Since we all know that the "stove-pipes" fulfill similar basic missions, I think that a few examples of how we've used the 60s will demonstrate quite vividly the efficiency of these "weapons of opportunity."

The first incident occurred in the beginning of November 1950. I remember quite distinctly because Frank "Pappy" Noel, the AP Pulitzer-prize winning photographer, who was returned by the Communists after three years in a prison camp, had taken pictures of my men and myself as we heated a little "joe." The next day we made physical contact with the enemy during the late afternoon, and held it until about 2200 when the Chinese attacked in earnest. Bugles blared and white and green flares flew throughout the night while our artillery, 4.2s and 81s all did fine work.

Then at about 0445, men in our company and battalion command posts, which were side by side some 100 yards to the right of the river bed, heard enemy voices quite clearly in the early morning air along the river. I waited until the riflemen guarding the forward fringe of our CP thought they could see forms to their front, then I called for one illuminating flare 50 yards out. Fortunately it broke right in back of the incoming enemy so that we could see the three of them, but they couldn't see us. Our riflemen and BARmen clobbered them with some accurate shooting. Since no one followed this "point" of enemy into our area, we relaxed temporarily until dawn when we expected their big push.

However, it turned out, as daylight slid down the river bed towards us, that the Chinese (our company was the first Marine Corps rifle company to actually be attacked by, and recognize, Chinese Communist Forces) had moved between Baker and Charlie Companies across the river during their well coordinated night attack. Now they were on their way back up the river bed.

Since they were within 300-400 yards over on our left flank, it was clay pigeon play for our riflemen

the first minute or so. But then the Chinese, who saw their first 30-odd comrades get punctured by small-arms fire, dove into the defilade offered by the river bed. Then the faithful 60s went into action. Our first round landed 25 yards up the side of the hill above the river floor and the second sweetheart sank into a group of enemy. Then we dropped rounds into the tubes a bit faster than the 30 rounds per minute the mortar manual would recommend, and the defilade frustrated us no longer.

Later we counted some 200 Chinese in this riverbed, mostly victims of those splendid 60s. It was a case where small arms fired too flat, and the 81s, 4.2s and artillery could not possibly have been brought in, since we had two companies less than 100 yards up on the high ground on the other side of the river.

Another fine example of the close-in reliability of the mortar occurred on 28 November 1950. Our Charlie Company had moved back along the MSR, some three miles south of Yudam-ni, in order to protect that road against a raid which had been predicted by a bearded burgher, to our Korean interpreter, in trade for some rice and a buttocks-warming by a small fire. Charlie Company had barely begun to dig in when the surrounding hills spewed forth many, many Chinese who were anything but happy local farmers. Somehow, the company held out until dawn, and shortly after Able Company had returned from a night-long raid to the southeast of the valley of Yudam-ni, we set out with Baker Company in our wake to help our buddies in Charlie Company.

About one mile down the road, we began receiving long range machine-gun fire, so it was up to the high ground for "Stable Able." Fortunately our lead platoon surprised a half dozen Chinese setting up two machine-guns which could have slowed down our uphill march, but soon we ran into a real problem. To our front was a draw some 200 yards wide, then a ridge which I knew to be about 100 yards wide—since we had occupied this ridge on the way north. Down behind this ridge was our beleaguered "C" Company. The problem was this—how could we destroy the company-size unit of enemy on this ridge to our



... the second pilot dropped a napalm above our WP

front without our small arms fire ricochetting into the friendly troops to their rear? The solution—the 60s!

Since we had been there before, I was sure of my range, so I put two guns to work from defilade, raking the left flank of the ridge and working down slowly towards the road to our right. Meanwhile, two of our rifle platoons moved rapidly up the left flank and closely followed the mortar fire, which killed some dozen enemy before the remainder started towards the road. Then, as our platoons gained the ridge top, the riflemen could fire all the small arms they wanted down the ridge

line towards the road without fear of hitting their "C" Company buddies. We displaced one mortar forward while the other still drove the Chinese down the ridge-line and across the road to a snow-covered plateau on the far side. Here "B" Company, on the road, caught the Chinese in a deadly crossfire, and they broke into bands of 10 or 12 each, and scattered all over the hillside.

Suddenly the sky was alive with Marine Corsairs which roared down the ridge line in search of targets. As the first plane swooped up over the high ground across the road, I

No radios or wire—just a loud voice and nimble fingered young men



called for one white phosphorous round which luckily puffed its white-hot death into a group of the enemy just about to disappear into the wooded area to their front. The second pilot must have thought that I was marking targets for them, because he planted a monstrous fire bomb of napalm just above our WP round and about 40 Chinese roared rapidly on the dead—and I do mean dead—run. Between .50 caliber slugs and napalm, interspersed with rockets, those four planes cleaned up the area rapidly, and "C" Company was once again back in the 1st Bn, 7th Marines.

The third—and last example of how mortars serve the gravel-crunchers, occurred a few days later as we drove from the town of Hagaruri, at the base of the Reservoir, on towards Koto-ri.

Everything seemed fine as our second and third battalions flanked us on high ground on both sides of the one and only road. We of the 1st Bn served as security for the motorized train of vehicles and wounded slowly making its way southward. Suddenly, the relative quiet was split with the staccato sound of heavy machine-gun fire, and bullets buzzed overhead in great volume.

A runner from Bn came over to our left flank, yelling for the 81s. The battalion S-3 passed the word back along the train for "81s up!", but since we had two good 60s left in "A" Company, I asked if we could help. The runner said two machine-guns were holding up a company's advance over some open ground on our left, and immediately our riflemen looked up over the 3-foot defilade afforded by a bank along the edge of the road.

However, the ever-increasing fire pinned them down, and the old school solution was to be with us again. How could we hit the enemy without him hitting us in return and swelling our already high casualty list? The mortars could do it! I got a fast glimpse over the parapet and saw, some 150 yards across the field, machine-guns spitting slugs in all directions. But, a few trusty 60mm rounds coughed out and the Chinese who lived through it saw the light rapidly. Why should they fight something they could not hope to hit with their flat trajectory machine-gun fire when the gunners who

diminished their ranks were safe, in defilade?

The enemy raced to the high ground to our front, but they raced not far before our machine-guns and M-1s cut them down in expert fashion, and once again the 1st Mar Div pushed on—on to Koto-ri, Chinhung-ni and Hamhung and the sea.

Braggadocio?—No! Just the facts. The old "weapons of opportunity" along with the splendid fire of the rifleman, the BARman, the machine-gunner, the artilleryman, the naval gunner and the pilot—combined efforts to pave the path to freedom for the men of the 1st Mar Div. A unit of men who believed that the teamwork of Marine and naval firepower could meet and beat any enemy, at just about any odds.

Yes, there are more examples but do we really need more? I believe that these are ample to demonstrate why the men who delve in things pertaining to mortars of all sizes think that there is something just a trifle bit special about these, their

gravel to crunch and more world-beaters to beat, you'll hear the hills of Korea, or other lands, echo and re-echo with the familiar cry of—"Mortars up!"

In dealing further with specific statements which decidedly do not ring true to an experienced infantryman, let us first take: "Today's infantry commander would probably be most reluctant to concur in this cold-blooded analysis of one of his primary weapons. His reluctance would probably be based on his dependence on the mortars as his ace in the hole should he not receive adequate artillery support."

This is really a truly amazing statement of admission from the author in that his article continually leads the reader to believe that all artillery fire is perfection itself, which negates the requirement for any and all mortars. However, let us get one little fact straight about all of our fine supporting arms: they just are not killing all the enemy that our radios, TV, newspapers and other



Peleliu's ridges: artillery's headache—mortar's meat

beloved "tiny tubes of terror."

Mortars alone could win no wars, but you just can't leave out these muzzle-loading guns when you talk about ways and means of beating the enemy anywhere!

The foregoing is a small tribute, I hope, to the unsung men who practiced long hours in peacetime Fleet Marine Force units, or weekend and summer Reserve training units at tedious, sometimes seemingly useless gun drill.

But, as long as there is more

media claim! I have seen 20 artillery rounds powder an enemy hillside, which had originally been literally crawling with enemy, yet when our men charged up five minutes later, maybe two or three enemy dead would be found as evidence. And it was the same thing for air—I've seen two "Tiny Tim" rockets, a flaming napalm bomb and many, many .50 caliber slugs blast, scorch and puncture such a hilltop, and yet when we got there, only a few charred bodies would be in evidence.

Now, unless the Reds had flown off a thousand bodies in flying saucers during the five-minute period between the last artillery round and our arrival, the mathematical marvel who figured that every round of arty gets 11.23 enemy needed to have his slide-rule re-calibrated.

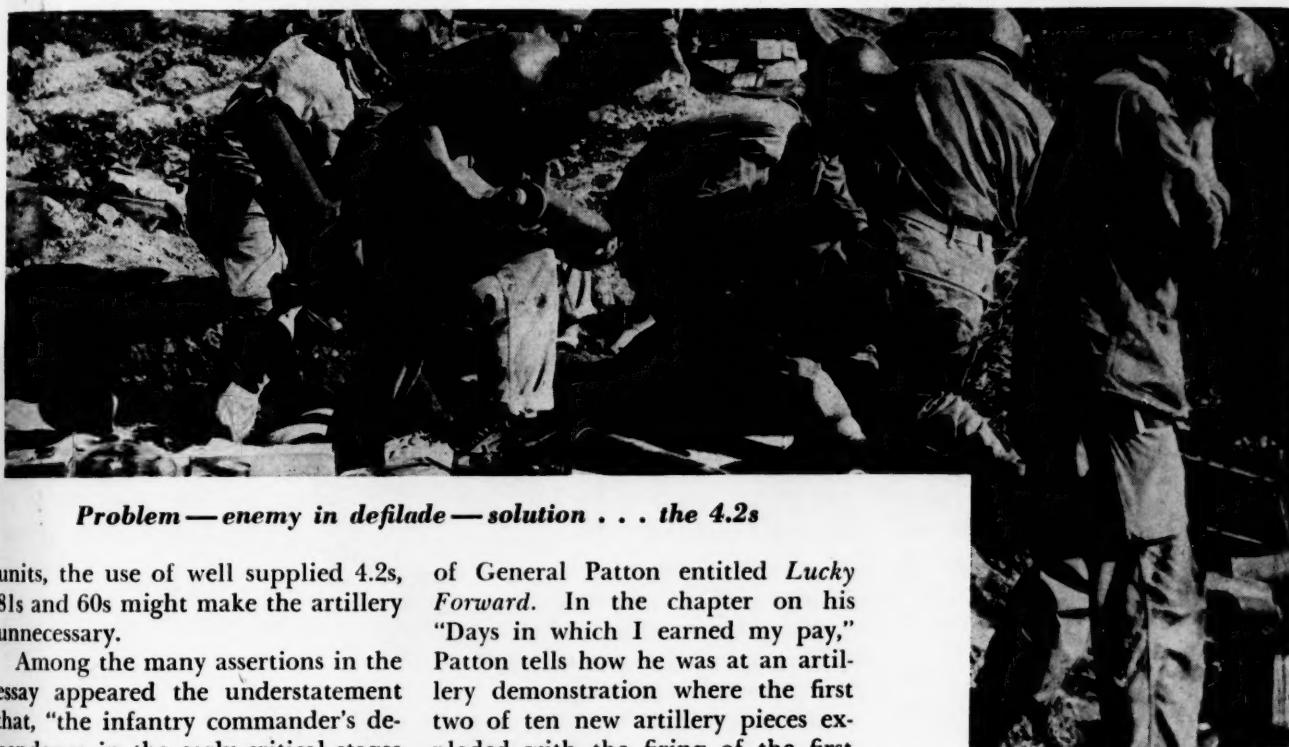
As I sit here re-reading the article for the third time, another thought strikes me. It states, "He (the FO) realizes his supported infantry is chronically short of trucks." The infantry sure is short of trucks, but I might say here, with tongue in cheek, that if the artillery's trucks were divided up amongst the rifle

When I can state that one 3-gun 60mm section popped off 3,000 rounds in one night, or 1,000 rounds per gun, it gives a small indication of how many mortar rounds have been fired since the inception of the terrific tubes. To use a few isolated instances to illustrate their lack of dependence is a little naive. Our 60s fired many, many, many rounds in the eight months I served in the company, and not even one little short round! Seems to me those "malfunctions in battle" are *really* hidden!

While speaking of artillery, let's refer to Robert S. Allen's biography

mortal is "uneconomical"; it is not "ballistically deficient" in battle—it is *deadly* efficient; and the use of the term "treacherous malfunction" is sheer nonsense! What can happen that is so treacherous? — the wearing down of the firing pin? — the de-shocking of the shock absorbers? Can the firing of a few faulty rounds, that were probably ten years old, cause the latter quoted term to be an "irrefutable fact?"

In addition to the foregoing, let us never forget that the rifle company commander and the infantry battalion commander are not being uneconomical when they utilize per-



Problem—enemy in defilade—solution . . . the 4.2s

units, the use of well supplied 4.2s, 8ls and 60s might make the artillery unnecessary.

Among the many assertions in the essay appeared the understatement that, "the infantry commander's dependence in the early critical stages of an amphibious operation has not been without a sound basis. . . Mortars closed the breach within the limitations imposed by the uncertainty of their own ammunition supply."

Let me tell you here that one 60mm mortar section on Peleliu was "limited" to firing over 3,000 rounds the first night they landed. It was firing at a target in defilade behind an enemy held hill some 250 yards off the beach—air, naval gunfire and artillery couldn't get to it.

But are we, on such a "rare" instance to be forced to charge over to the Class IV dump for one lonely mortar tube? We must, if we want to get that otherwise inaccessible enemy position.

of General Patton entitled *Lucky Forward*. In the chapter on his "Days in which I earned my pay," Patton tells how he was at an artillery demonstration where the first two of ten new artillery pieces exploded with the firing of the first round! Who has ever heard of a like explosion with a mortar? No one, I'll wager, because they are safe, sane, and reliable!

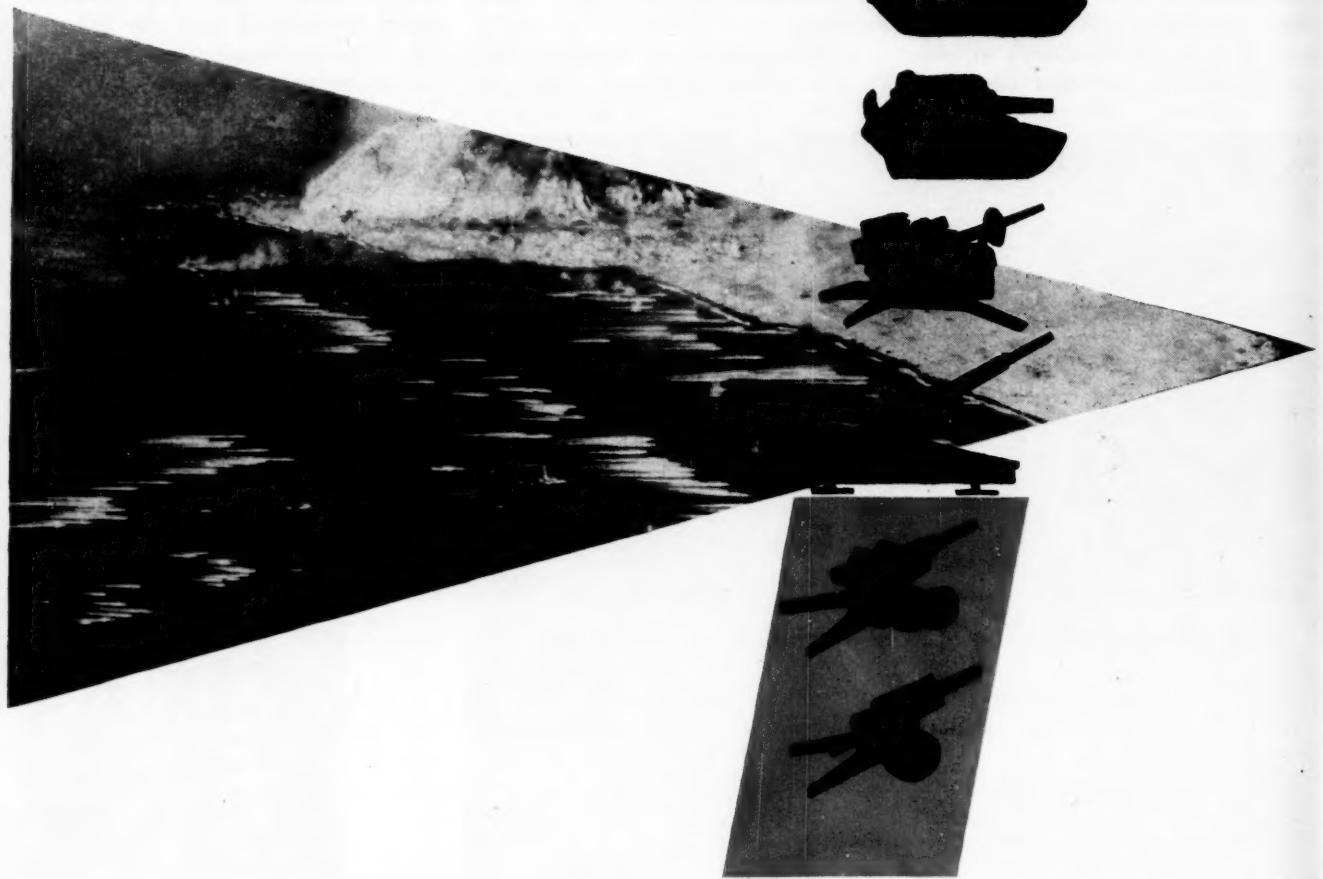
As for counter-mortar radar, when and if the enemy has it, we'll have it too, won't we? And if its expert use neutralizes our mortars, and we return the favor, fine! I can see securing our mortars *only* under those circumstances! If they'll stop using them, OK. But let's never forget that no sound has ever filled the cruncher's heart with both unaccountable and accountable fear more than the eerie whine of the incoming mortar round. It must be a valid premise, if theirs terrify us, ours do likewise to them.

Nothing with the talent of the

sonnel to fulfill missions with their mortars. It is one of the easiest operations in the Marine Corps to take an alert young mortar gunner, squad leader or ammo carrier and give him a responsible job in a rifle platoon (and aren't they, after all, the most responsible jobs in the Corps?), because they are highly trained infantrymen, primarily and mortarmen, secondarily.

But, to take the average rifleman and follow the suggestion of pulling these mortars out of Class IV for "special operations," and require this Marine to become a mortarmen on the spot—this, as any young Marine can see, is an equine creature of an entirely dissimilar hue. USMC

**Modern war demands modern weapons. Here are a few
that will add new punch to our landing force structure**



THE INITIAL PHASE OF EVERY war or major conflict in the history of the world has seen the employment of the same type weapons and ammunition with which the opposing forces in the preceding conflict were equipped at its termination. This statement may seem incongruous to the student of modern history who is familiar with the recurring pattern of major conflict. This pattern has beset the United States from its beginning in early colonial days, but nevertheless, it is irrefutable.

But modern war, with its weapons of mass destruction, will never again permit such a delay from the onset of hostilities to the launching of an all-out offensive.

In this respect, the advent of the Korean war was a blessing in disguise. Our armed forces were again equipped with weapons of several years vintage, but fortunately the limitations of our combat potential were offset by the restricted scope of the Korean war. The ROK forces initially deployed in Korea were simply unable to cope with the superior forces of the North Koreans, who were well-equipped with some of the better weapons of the Russian arsenal. Public and official clamor resulting from the inability of these forces to halt the North Korean armor-spearheaded assault was loud and vitriolic.

The rebuttal, however, was very

simple: one had only to analyze the meager funds allotted for the development of improved arms during the period succeeding World War II. But, faced with the stark reality of having to field an ill-equipped Army against a well equipped enemy at any moment, the coffers were opened and requests for funds to support development of arms and ammunition were given highest priority.

Development was telescoped, and in many instances production was initiated far in advance of acceptance of final design. The starting gun had sounded and the armaments race was on. However, unlike its real life athletic counterpart over a fixed distance, there was no way of determin-

ing whether this armament race would be a sprint or cross-country affair. Four years have elapsed since this race began and the finish line is still in the future.

The progress of arms development throughout this period is of vital interest to the Marine Corps in that it has a direct bearing on the capability of carrying out its mission of a force-in-readiness. The degree of progress of arms development will determine whether the landing force can assault the beachhead of the future on a superiority, rather than on an inferiority basis. Superiority by the landing force in an amphibious operation cannot be attained by the quantity of personnel or weapons, rather it must be attained by the *quality* of such elements. Personnel quality is controllable by the Marine Corps—we have always had it as represented by the finest fighting men in history. Weapons quality is to a degree uncontrollable since few of our weapons are wholly developed by the Marine Corps, and we must rely on the other services' contributions to improve weapons that meet our *amphibious requirements*.

To this end, the Marine Corps monitors all arms development progress, both domestic and foreign, with a view to equipping its landing force with the most effective and lethal weapons available.

The weapons system of the Marine Corps can best be analyzed on a functional basis; namely—infantry weapons (excluding anti-tank), anti-tank weapons, artillery, combat tracked vehicles and ammunition.

The infantry weapons of today are essentially those of pre-Korean days. However, certain significant improvements have been realized and other developments are in sight.

The present family of small arms includes the M1911A1 caliber .45 Pistol, the M1 Rifle, the Browning Automatic Rifle, the heavy and light machine guns and the M3A1 Submachine gun.

The M3A1 caliber .45 Submachine

By LtCol S. H. Fletcher

Gun has recently been adopted to replace the venerable Thompson submachine gun as an auxiliary weapon for crewmen of combat tracked vehicles.

The significant features of the M3A1 are its extreme simplicity and lightness of weight. The M3A1 Submachine gun weighs only eight pounds as compared to 11 pounds for the Thompson. The simplicity of design of the M3A1 minimizes the chance of jamming or malfunction as a result of the unwanted presence of foreign matter, such as mud, snow or ice within the operating mechanism. The M3A1 fires standard caliber .45 pistol ammunition.

The M3A1 Submachine gun is air-cooled and is operated by blow-back. It has a folding adjustable stock which affords optimum flexibility of use. With stock extended, it may be fired from the shoulder, while with the stock folded forward, it may be fired as a pistol or from the hip.

The remaining infantry weapons are those available at the close of World War II. However, the small arms developmental program within Army Ordnance shows promise of

future availability of vastly improved weapons. This developmental program encompasses both weapons and ammunition.

The developmental ammunition is the caliber .30, T65 series. It has the wounding and stopping power of the present caliber .30 armor-piercing round but is smaller, lighter in weight and adapted for use in full automatic as well as semi-automatic shoulder weapons. The short length of the T65 round allows for a reduction in the overall size of the receiver mechanism of the weapon, thereby contributing to reduction in overall weapon weight and size. The T65 cartridge will penetrate a steel helmet at 1,200 yards and both sides of a truck body at half that range.

Three new rifles are in the testing stage at the present time. The FN (manufactured in Belgium) is capable of replacing the M-1, carbine, machine-gun, submachine-gun or BAR. It is shorter and lighter than the M-1 and it has a 20-round capacity.

Two new American made rifles show a similar improvement over the M-1. The T-44 uses a "turning bolt" principle, similar to the M-1 and is fed by a 20-round magazine.



The T-47, another lightweight rifle, has a bolt action along the lines of the BAR and it uses BAR-type magazines.

Both American-made rifles come equipped with grenade launchers and bayonets. The FN can be chambered to fit the new T65 cartridges described previously and the T-44 and T-47 were designed to take the new lightweight rounds.

Similar developments are underway in development of lightweight machine guns but their design characteristics are still classified.

The remaining infantry weapons encompass mortars; the 60mm mortar for company use, 81mm mortar for battalion use and the 4.2-inch mortar for use at the regimental level. The 60mm mortar, M2 is the same weapon as that in use at the end of World War II, but new 81mm and 4.2-inch mortars have become available.

The new 81mm mortar, M29 on Mount, M23A2, has a total weight of 93 pounds. The barrel weighs 28 pounds, the bipod 40 pounds and the baseplate about 25 pounds. This weight compares to the overall weight of the M1 mortar of 136 pounds; a distinct weight saving in view of the fact that this weapon is normally man-carried.

The M29 Mortar has 360 degrees traverse without repositioning the baseplate. This is achieved through a swivel-type socket. The range of the M29, with ammunition of World War II type in current issue, is 3,290 yards. However, certain rounds are now under development by which the range will be increased to approximately 4,000 yards. This new round will weigh a little over nine pounds, with greatly increased effectiveness.

The new 4.2-inch mortar, M30, which has recently become available boasts a range of 6,500 yards as compared to 4,400 yards for the old M2 4.2 mortar. This increased range exacts its dues, however, for the overall weight increases from 343 pounds for the M2 to 626 pounds for the M30. The M30 mortar, like the M29 81mm mortar, is capable of 360 degrees traverse attained by a rotator operating in the inner ring of the baseplate. The M30 fires a projectile weighing over 27 pounds as compared to the 24-pound projectile of the M2, known so well in Korea.



New mortars: left, the 81mm; right, the 4.2

The artillery structure of the Marine Corps for landing force use encompasses both field and antiaircraft artillery. Field artillery units include the light and medium battalions in the artillery regiment of the Marine Division, employing the 105mm and 155mm Howitzers, respectively. Separate force units include medium and heavy artillery battalions, the former utilizing the 155mm Howitzers and 4.5-inch rocket launchers while the latter is equipped with either the 155mm gun or the 8-inch howitzer.

Antiaircraft weapons are provided to afford low and medium level defense against enemy aircraft flying at near-sonic speeds.

FIELD ARTILLERY WEAPONS of the Marine Corps are essentially the same as those of World War II. These weapons are all of the towed variety and include the 105mm Howitzer, M2A1; the 155mm Howitzer, M1; the 4.5-inch Rocket Launcher, M21; the 155mm Gun, M1A1 and the 8-inch Howitzer, M1.

The significant improvements in field artillery weapons of the Marine Corps are represented by the 8-inch Howitzer and the new M21 4.5-inch Rocket Launcher, which will eventually replace the World War II T66 series weapon.

The M21 Rocket Launcher is of

similar appearance to the T66 except that its frame is designed of tubular steel for the optimum combination of durability and lightness of weight. The electrical ignition system has been vastly improved, thus eliminating the most serious deficiency inherent in the design of the T66.

Adoption of the 8-inch howitzer for Marine Corps use fills a long felt need for an artillery weapon with a heavier long range punch than that of the 155mm gun. The simplicity with which the 8-inch howitzer was integrated within the family of Marine Corps field artillery immediately raises speculation as to why this course of action was not taken earlier. The 8-inch howitzer M1 is mounted on the same carriage as the 155mm Gun M1A1. Conversion of 155mm guns to 8-inch howitzers simply involves an exchange of gun tubes and minor adjustment of the traversing mechanism.

The overall weight of the 8-inch howitzer is approximately the same as that of the 155mm gun — 15 tons. The 8-inch howitzer fires a 200-pound projectile to a maximum range of 18,510 yards while the maximum range of the 155mm gun firing a 95-pound projectile is approximately 26,000 yards. The increase in target effect afforded by a 200-pound projectile, as compared to



8-inch howitzer: a new tube for an old carriage

one of 95 pounds, is obvious. Accuracy of the 8-inch howitzer is comparable to that of the 155mm gun.

The antiaircraft weapons now in use in the Marine Corps are all of World War II vintage. The basic antiaircraft artillery weapons of the Marine Corps today are the towed 40mm AA Gun, M2A1 for low-level defense and the 90mm Gun, M1A1 for medium level defense. The quad .50-caliber machine gun, M55 is provided as a companion protective weapon to both the 40mm and 90mm AA guns.

A developmental self-propelled twin-40mm AA gun is under consideration to replace the towed 40mm M2A1 AA gun. Its companion weapon will be the quad .50 caliber machine gun mounted on the World War II half-tracked vehicle, designated the M16A1.

The combination of the M16A1 self-propelled quad .50 machine gun and the present version of the self-propelled twin 40mm Gun, M19, have proven their versatility in

Korea as excellent ground support weapons. Their automatic multi-gun features provide a tremendous shock of fire power against ground targets at relatively long ranges.

The efficiency of the towed 90mm gun, M1A1 will be greatly increased upon availability of the M33 Fire Control System which will extend the capability of that weapon to targets flying at near-sonic speeds. Improvements in electronic fire control devices will likewise result in increased reliability and a decrease in maintenance requirements, the bugaboo of our present 90mm antiaircraft fire control system.

The most significant development in the field of antiaircraft artillery is represented by the 75mm Skysweeper, officially designated the Gun, 75mm, T83E1 and Mount, AA, 75mm, T69.

• OUR ANALYSIS of the organic weapons of the Marine Corps proceeds logically to the field of combat tracked vehicles. These weapons en-

M-48: to be standard. It will be around for a long time



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compass tank and amphibian tractors. Specifically included therein are the gun tank, the flame tank, the tank recovery vehicle and amphibian tractors; the following discussion will be in that order.

The M48 Tank is the first completely new medium tank to be developed since World War II and is the finest weapon of its kind ever designed.

The step from the M4A3 Tank used in World War II to the M48 Tank is a tremendous one, the true significance of which can be had only by review of the postwar tank development program within Army Ordnance.

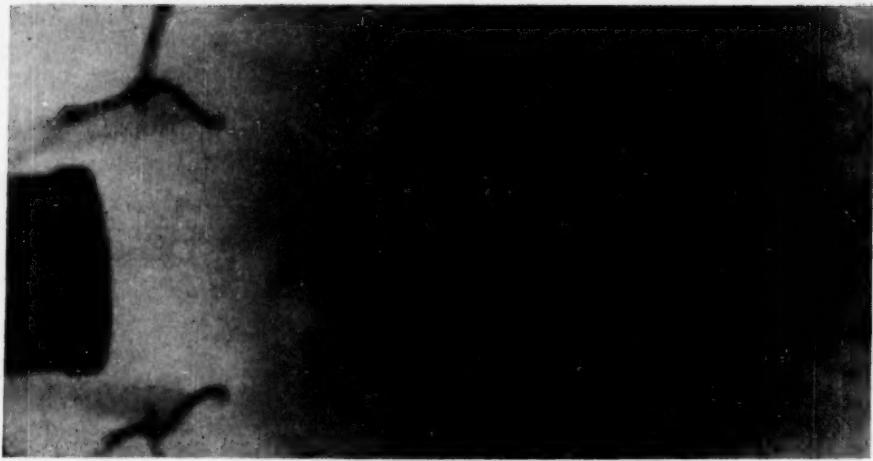
The reduction in availability of Army Ordnance Research and Development funds at the close of World War II was felt most seriously in the tank development program.

Limited availability of funds to support tank development dictated two courses of action in that area: either to concentrate the bulk of the limited monies available to development of major tank components or to build a few complete vehicles each year. To follow the former course would mean that, should an emergency arise, the Army would have no proven design of complete new tanks. To follow the latter would mean complete vehicles with incompletely developed components. Since a tank is no better than its components, it was decided that development of modern components was preferable to availability of a few brand new tanks of obsolescent type.

On the advent of the Korean War, several hundred World War II Pershing M26s were converted into Patton M46s, the major change being the installation of a newly developed "engine and cross-drive transmission power package"—one efficient result of "component" risk.

The M46 was rated a good tank with the advantage of proven design. However, it was felt that to resume production would not represent a step forward. A completely new medium tank, the T42, was being designed but the design drawings were still months away.

Speed being of the essence, the Ordnance planners agreed upon a second calculated risk. The design work on the turret of the T42 Tank was complete, so it was decided to utilize the T42 turret (with range



Canister: overgrown buckshot dispersed in a lethal cone

finder) on the basic M46 hull. On 17 July 1950, the new tank, designated the M47, was placed in production even though no complete design drawings existed.

The initial increment of M47s came off the production line in May 1951, only ten months after initiation of production.

Concurrently with the above described development of the M47 medium tank, Army Ordnance proceeded with the development of an entirely new medium tank. This new tank is designated Tank, 90mm Gun, M48 and is popularly known as the Patton 48 in honor of the late General George S. Patton, Jr., of World War II fame.

The Patton 48 is completely engineered as an integral unit and represents no hybridization of design as was the case of the M47 Tank. The Patton 48 is in the 45-50 ton class. Its new design affords a low silhouette, elliptical sides, elliptical turret, stronger and wider tracks, a powerful engine, cross-drive transmission and power steering.

Insofar as armament is concerned, the Patton 48 mounts an improved 90mm high velocity gun, two .50 caliber machine guns and one .30 caliber machine gun.

The salient feature of the armament of the Patton 48 is a precision range finder which calculates the distance to an enemy tank and affords the tank gunner an opportunity of delivering the first round before the enemy gunner can calculate his position accurately and "range in."

Another important main armament characteristic is the "quick change" gun tube feature which permits replacement of worn gun tubes

in a matter of minutes under field conditions.

The secondary armament of the Patton 48 includes an improved .50 caliber machine gun mounted atop the turret which is a dual-purpose ground and air weapon. This .50 caliber machine gun is remotely controlled by the tank commander and can be aimed, fired and re-loaded by that individual from inside the turret without exposing himself.

Both the hull and turret of the M48 are one-piece armor castings. Their elliptical configuration affords excellent armor protection. Maximum obliquity is offered striking projectiles thereby increasing the possibility of deflection rather than "biting in" with resultant penetration.

The power plant of the M48 is an improved version of the Ordnance-Continental air-cooled engine, already battle-proven in Korea in the M46 Tank. It is an 810-horsepower, V-12 engine.

The suspension system of the Patton 48 is superb. The wider and stronger tracks disperse the overall weight of the tank over a wide area and afford excellent floatation on soft ground or mud. This characteristic is of prime importance in the adaptability of the M48 for amphibious landing operations.

The combination of cross-drive transmission and power steering tends to minimize driver fatigue in that the M48 Tank is as easy to drive as a modern automobile.

The M48 Tank will truly be the most modern Marine Corps weapon for landing force use. It will be capable of engaging any known tank, except the Russian heavy tank

—the JS III, on a superiority rather than an inferiority basis. The M48 is destined to be the standard Marine Corps tank.

The organic equipment of the Marine Division at the end of World War II included the POA (Pacific Ocean Area) — type flame tank. This weapon was essentially an M4A3 Tank with a 105mm howitzer and an auxiliary type flame gun installed—maximum fuel range is 100 yards.

The POA Flame Tank was devised in Hawaii during World War II by a composite group of Navy "Sea-Bee," Army and Marine technicians. M4A3 Howitzer Tanks were converted to POA Flame Tanks using whatever materials were at hand, and as a result, the POA is a "plumber's nightmare." In recognition of the proven capability of the main armament type flame tank (flame gun substituted for conventional tank gun), the Marine Corps in 1950 initiated development with the Army Chemical Corps of such a weapon to be based on the developmental medium tank.

This developmental main armament or integral flame tank was based on the M47 Tank chassis and was designated the Tank, flame, T66.

The testing of the T66 Flame Tank was completed in October 1952. Normally, quantity production would have been initiated immediately, but the advent of the superior T48 Medium Tank, destined to be the standard of the Marine Corps, indicated otherwise. Standardization of the basic chassis between gun tanks and flame tanks was considered to be of prime importance and, accordingly, the Marine Corps flame tank program was oriented to the T48 Medium Tank.

Difference in size and configuration of the T48 Tank necessitated construction of a new prototype for test prior to release for production. Accordingly, the design drawings of this weapon designated the T67 Flame Tank were finalized and production contract was let for one prototype model. Indications are that the T67 Flame Tank will have superior performance characteristics to the T66 Flame Tank. Its eventual availability within the Marine Corps to replace the POA Flame Tank will give the Marine tank-

infantry team a combat potential never before realized by a like unit in all history.

The tank recovery vehicle in use today is the Vehicle, Tank Recovery, M32B3, which utilizes the M4A3 tank chassis. The M32B3 is the superior recovery vehicle of the M32 series and, though adequate for tanks of the M46 type, manifests certain inherent shortcomings in its capability of recovering and serving the M48 Tank.

THE NEXT ITEM of interest in the field of combat tracked vehicles is the amphibian tractor, both the cargo and armored type. The amphibian tractor, officially known as the Landing Vehicle Tracked or LVT, was a Marine Corps development of World War II and was invaluable in crossing the coral beaches of the Pacific islands.

Development of an improved modern LVT was carried forward although again, the limited availability of development funds prior to advent of the Korean war seriously restricted the scope of such development.

The modern LVTP5 is completely enclosed with overhead armor that provides protection against small arms fire and shell fragments. The vehicle has an improved power package with cross-drive transmission and its suspension system affords better cross-country mobility than that of its predecessors. Attainable water and land speed represent significant advances over those of the World War II vehicle.

The armored version of the modern LVTH6 mounts a modern 105mm howitzer, which makes it a logical contender for a self-propelled light artillery weapon to replace the present towed 105mm howitzer. The amphibious characteristics of the weapon are of prime importance in consideration of its suitability in the light artillery role for landing force use.

The outbreak of the Korean war pointed up immediate action in providing the Marine Corps with improved LVTs. An LVT modernization program was initiated and serviceable LVT3s, LVTA4s and LVTA5s were processed through modernization facilities. The modernized LVT3, designated the LVT-3C, has performed yeoman service in

Korea, its notable performance being that of the crossing of the Han River following the Inchon landing.

THE LANDING FORCE must have the capability of withstanding mass armored assault.

The tank itself is an excellent antitank weapon and fulfills to a certain degree all three of the prime requirements; namely, mobility, accuracy and effectiveness. Size and weight, however, impose definite limitations on mobility. Logistic support requirements imposed by tanks restrict the number of tanks that can be maintained in a balanced force. Cost consideration further restricts the number of tanks that can be made available.

The ground antitank structure of the landing force requires a family of antitank weapons for use at all tactical levels from that of the infantry squad to that of the Division. Mobility and range requirements logically vary, although effectiveness as measured by penetration ability is the same at all levels. To expect a rifle grenade, however, to inflict the same damage on an enemy tank as a 90mm shell, is ridiculous. However, the damage must be comparable and capable of killing the tank or knocking it out of action.

Army Ordnance has placed great emphasis on development of improved antitank munitions during the post-World War II period. Ap-

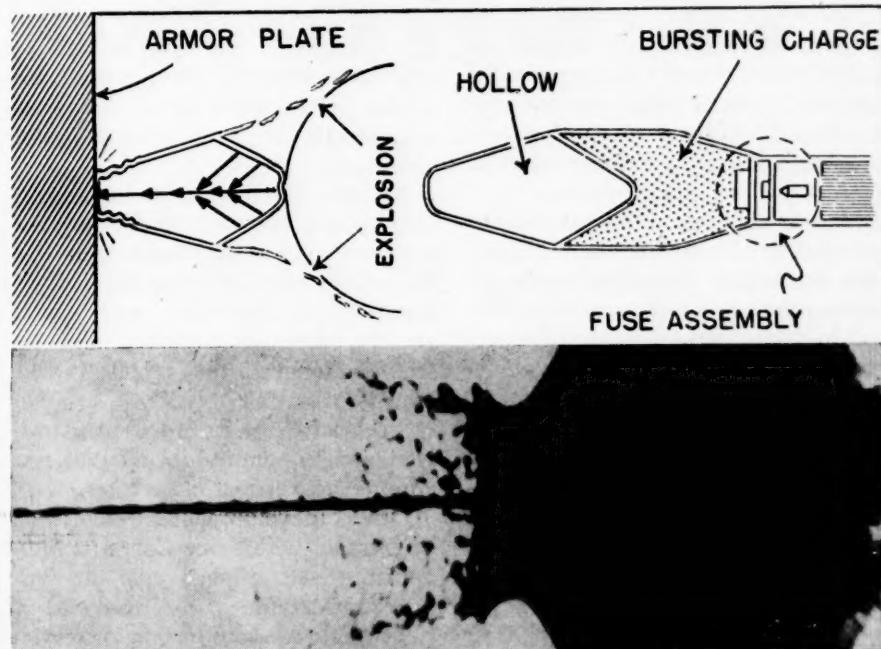
plication of the principle of the shaped charge to design of antitank ammunition has resulted in penetration characteristics never before attained, and at least a temporary triumph of armament over armor.

Shaped charge rounds, designated HEAT (high explosive, antitank), are provided for all type antitank weapons. The penetrative ability of a HEAT round is independent of the striking velocity on the target. Rotation, however, adversely affects penetration, since the jet is broken up and dissipated. For optimum penetration effectiveness, all HEAT rounds should be fin-stabilized.

HEAT rounds attain their penetration by means of a metal lined conical cavity in the forward end of the explosive charge in the projectile. Detonation, however, must occur at a certain distance, known as standoff, from the armor for maximum effectiveness.

Upon impact, the nose crumples a predetermined distance and the explosive charge is set off at the rear, or apex, of the conical cavity. The force of the explosion and the conical configuration causes the explosive waves to merge and focus as if they were streams of water. The metal liner is literally turned inside out, becoming teardrop-shaped pellets traveling at very high speed in a concentrated jet. This jet impacts on the armor and causes it to flow like mud, resulting in penetration of

HEAT: its shaped charge makes armor flow like mud



the armor. Particles of the jet passing through the hole wreak havoc with the interior of the tank and are lethal. The only shortcoming of the HEAT round is its lack of accuracy, which is inherent in the design of any fin-stabilized projectile.

The smallest antitank weapon for landing force use is the rifle grenade. The World War II M9A1 Antitank Rifle Grenade was grossly ineffective and actually useless as an antitank weapon. Advent of the Korean War found the Marine Corps in the process of testing the foreign Energia Antitank Grenade, which is an HEAT round. The Energia proved its capability of penetrating at least eight inches of armor. Other characteristics were satisfactory, and the item was standardized by both the Army and the Marine Corps as the Grenade, Rifle, Antitank, M28.

The antitank weapon for use at the company level for landing force use is the Bazooka or 3.5-inch Rocket Launcher, which also fires an HEAT round.

The 2.36 Rocket Launcher was developed during World War II as an antitank weapon which could also be used against fortified positions. The 2.36 Rocket Launcher is ineffective against modern armor, and accordingly, development of an improved version was initiated on a priority basis soon after the beginning of the Korean War. This new weapon is designated the Launcher, Rocket, 3.5, M20 Series and is only a few pounds heavier than the 2.36 Rocket Launcher. The 3.5 Rocket Launcher also has greater armor penetration and higher muzzle velocity, which results in greatly increased accuracy and effectiveness. A white phosphorous round is also provided that is extremely effective against enemy personnel.

The remaining weapons in the antitank family utilize the recoilless rifle principle for attainment of minimum weight characteristics. Recoil is eliminated by means of a pre-engraved rotating band and perforated cartridge case on the ammunition, enlarged chamber in the weapon and especially designed ori-fices in the breechblock which permit release of propellant gases to the rear. The present antitank weapon for landing force use at the regimental level is the 75mm Recoilless Rifle, M20. The M20 Rifle weighs 115

pounds and is fired from the Machine Gun Tripod Mount, M1917A1, weighing 53 pounds.

The M20 fires an HEAT round, but its armor penetration is relatively low by virtue of the fact that the ammunition is spin-stabilized, which causes the shaped charge jet to be dissipated.

Development of improved antitank weapons, some of radical design concept, shows high promise of availability of highly effective weapons capable of adequately coping with Red armor at an early date.

Improved antitank mines are now available that will blow the track off the heaviest Red tank. The standard antitank mine at present is the Mine, Antitank, M15 which has an explosive charge of 30 pounds as compared to 12 pounds for the World War II M6 Mine. The World War II light M7 mine has been discarded.

¶ A NEW CANISTER round has been developed to replace the World War II type, which although an effective round, caused extensive wear and erosion of the gun tube when fired. The new canister round is a can-shaped projectile containing many steel pellets. As the projectile leaves the gun, it breaks apart and the pellets are dispersed in cone fashion by the centrifugal force of rotation. Canister is simply overgrown buckshot and does a job no other ammunition can do. It is extremely effective at ranges too short for high explosive ammunition. A single canister projectile of size of the 90mm contains over 1,200 individual canister pellets. Canister rounds are under development for all field and antiaircraft artillery weapons and tank guns.

Another vastly improved ammunition type now available is the new antipersonnel mine designated the Mine, AP, Non-Metallic, M14. This mine is non-detectable and has a greatly increased lethality and effectiveness over the metal World War II Mine, AP, M2A1.

Steel cartridge cases for practically all artillery ammunition have been adopted to replace brass cases.

Other developmental items of interest to the Marine Corps include an improved sniper's rifle, an improved portable flame thrower, a lightweight air compressor for servic-

ing the portable flame thrower and a new smoke generator.

The new sniper's rifle will be available for issue in the Marine Corps within a few months. This rifle will be designated the Rifle, Sniper's, USMC, M1952 and consists of a standard M1 Rifle, mounting a 4-power telescope. Development of this weapon consisted of determination of military characteristics for optimum performance under all conditions of combat, followed by test and evaluation of all available commercial items. The Stith Bear Cub 4X hunting telescope was adopted together with a modified version of standard Army telescopic rifle sight mount. The M1952 Sniper's Rifle fires standard caliber .30 ammunition and is designed for optimum performance at 300-500 yards.

The major shortcoming of the World War II Portable Flame Thrower M2-2 is its excessive weight of 72 pounds. This weight is a man-killing load and has proven impossible to handle under the difficult terrain conditions of Korea. Development in this area is aimed at maximum weight reduction with increased range characteristics.

The air compressor for servicing the portable flame thrower in use at the end of World War II was designated the M1 and weighed over 800 pounds. The developmental item is sufficiently light to be man-portable, which affords a tremendously increased flexibility of tactical employment of the portable flame thrower.

The new smoke generator is designated the M3 and is of somewhat radical design in that it employs the pulse-jet principle. The beauty of the pulse-jet design is that there is only one moving part in the entire apparatus. The M3 is light weight and can be transported in a jeep. It is a highly efficient smoke producer and will function for hours of continual operation.

I believe it is apparent that the ground weapons structure of the landing force, as represented by those weapons discussed herein, is approaching optimum balance. In any future conflict, the Marine tank-infantry team, the heart of the entire landing force structure, will have a punch unequaled in the history of war.

US MC

NOBODY PARTICULARLY WANTED to be a Naval censor. But after all, somebody had to do the job. Some officer had to do it. A lieutenant is an officer. I was a second lieutenant. I was a Naval Censor.

At first the job wasn't so bad. I learned a lot about the proper way to write love letters. But the task began to pall after awhile. I told the company commander that it was a tiresome job. He agreed. I requested that he appoint another officer as Naval Censor. He refused. I was still a Naval Censor.

Aboard the *USS Lurline* in the summer of 1942, with the 2d Battalion, 3d Marines, my work tripled. Nobody except the "wheels" knew where we were heading. Rumors had us landing everywhere from Tokyo to Catalina Island. The Marines aboard the *Lurline* began writing more and more letters. I hadn't realized that so much paper and ink existed in the whole Marine Corps.

In my tiny stateroom, which I shared with five other second lieutenants, I waded through bales of letters—cutting, stamping "Passed by Naval Censor" and initialing. Even such witty poems as "Roses are red, Violets are blue, Lemons are sour, and so are you" failed to bring a chuckle from me.

Eventually, a problem was presented: where should I stow the thousands of letters that could not be mailed until we reached our destination? (Oh, yes, I had already fallen for the "mail-buoy routine.") My solution (*not* the school solution) was to place the letters in huge paper sacks, which I stuck into all the spare waste baskets I could assemble.

It was at about this time that one of my roommates conceived a little jingle that grew very tiresome: "Peter Piper perused a peck of prosy epistles; a peck of prosy epistles Peter Piper perused (and passed by Naval Censor)." Although I had a standard reply to the jingle, the requirements of good taste demand that I omit it at this time.

Anyway, to make a short story interminable, the good ship *Lurline* finally arrived off the beaches of Pago Pago, American Samoa. For the first time in about two weeks the ship could expel its trash and garbage without fear of enemy submarines picking up the scent. While



I'D HAD IT!

I and the other passengers gaped at the island's beautiful outline, the ship's stewards entered the staterooms to unload the accumulation of trash. The steward who serviced my stateroom was very efficient; it took him less than a minute to empty all the waste baskets.

Imagine the consternation of Peter Piper when he saw his pecks of prosy epistles floating, then sinking listlessly into the briny deep.

I'd had it!

By LtCol Carl W. Hoffman

First requirement: As Lieutenant Naval Censor, what are your actions and orders?

I made a hasty estimate of the bad situation, toyed with the idea of jumping in behind the letters, murdering the steward, re-writing the letters and requesting a transfer to embassy duty in a leper's colony. After discarding each of these cheerful alternatives, I assembled the troops and explained what had happened, giving full discredit to the role played by the steward. I was an extremely unpopular young man for a long while.

I was no longer a Naval Censor. Time has healed the scars. USMC

The Mystery of

Pete Ellis

AMERICAN SPIES HAVE DONE their bit since the time of Nathan Hale, but as a rule they have not been men of top-drawer strategic ability. An exception was a Marine officer who not only disclosed enemy designs, but also proposed a far-flung plan of operations which was officially adopted.

This officer, needless to say, was LtCol Earl Hancock Ellis, USMC, who occupies a unique position in American military annals. Planner and strategist as well as spy, he waged a single-handed war against the Japanese Empire. He shattered his health by overwork, and in the spring of 1923 Japanese officials reported his death, at the age of 43,

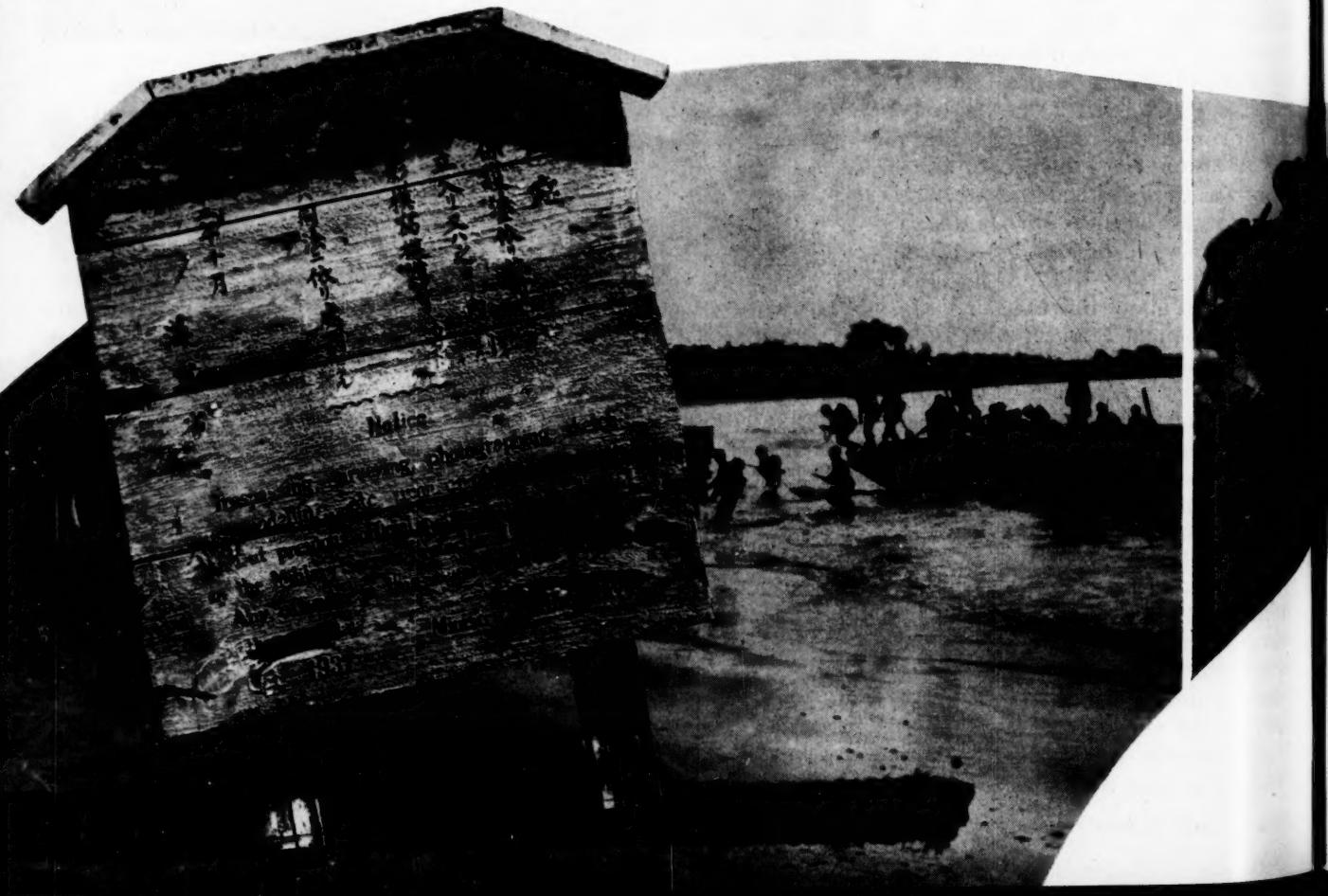
on the island of Koror in the Palau group of the western Carolines.

These reports described him as an American civilian, ostensibly a commercial traveler for a New York firm, who had suddenly died after a brief illness. Ordinarily the news would have been worth only a few paragraphs, but American newspapers made it a front-page story after learning that the deceased was an officer on leave from the Marine Corps. They would have been even more interested if they had suspected that a top-secret U. S. opérations plan for the invasion of Japan's mandated islands was based on proposals made in 1921 by Ellis.

There is little doubt that the Japa-

nese had suspected him of having broader interests in 1923 than those of a commercial traveler. But aggressor nations find it inconvenient sometimes to take official action against a suspected spy, and the actual causes of Ellis' sudden death can only be conjectured to this day. They have been wrapped in mystery ever since the American investigations of 1923, which were balked by a baffling lack of evidence.

Newspapers in this country were not reticent when it came to hinting at foul play. But the case seemed closed in the summer of 1923 when Ellis' remains were cremated in Koror and the ashes brought home for burial in the Kansas village



By Lynn Montross

where he spent his boyhood.

His life was as mysterious in many respects as his death, and legends have inevitably grown up about his strange career. Some of these tales are exaggerated and highly colored, but there is no question about the man's great contributions to American strategy in the Pacific during World War II.

In 1900, when Ellis enlisted in the Marine Corps at the age of 20, his horizon had been bounded entirely by Kansas and Oklahoma country towns. Although he had only a high school education, he was not held back by the slow tempo of peacetime promotion. For in less than a year, Ellis was commissioned as a second

dull his ardor, and the young lieutenant gave his men weekly work-outs in the field under simulated war conditions.

The chief mission of the Marine Corps as a force-in-readiness during the early 1900s was known as "advanced base work"—the occupation and defense of maritime positions to be used as coaling and supply bases by the Fleet. Schools were established for training Marine officers, and joint maneuvers were carried out with the Fleet.

Advanced base work was the forerunner of Fleet Marine Force doctrine, but at this period it was essentially a defensive concept. Pete Ellis was one of the first Marines to envision the transition to planned amphibious offensives. As a junior officer in the Far East, he laid the foundation of his late career by specializing in intelligence and terrain studies. A speaking knowledge of the Japanese language became an asset when he was sent on terrain studies to Guam. And it needed only a visit to Japanese-held Saipan to convince him that the designs of Tokyo would eventually bring about a collision with the United States.

lieutenant a few days before reaching voting age.

glimpse of the strategic concept that he was to make his life-work. Here, too, he began a friendship with John A. Lejeune, later a famous Commandant of the Marine Corps, that was to shape his career.

The nickname "Pete," dating back to those days, stuck to him so closely as to pass for his given name. He was a congenial soul at a frolic, but most of his energies were devoted to professional duties and studies. Garrison life in the tropics could not

Pete Ellis had found his mission. He apparently made converts as a Marine captain instructing at the Naval War College in Newport, R. I. For some of his outspoken ideas

He waged single-handed war against Japan. His life was as mysterious as his death

were remembered and adopted by his superiors. But first came the interlude of World War I, when two regiments of Marines served as infantry alongside a regular Army brigade in the 2d Inf Div.

Ellis was made a major in 1917 and sent to France as an observer. The following summer he was granted a request for transfer to the staff of BrigGen Lejeune, soon to be the commander of the mixed Army-Marine division. Ellis already had a reputation out of proportion to his rank, and Lejeune accepted his bold plan for an assault on Blanc Mont in preference to the cautious campaign of attrition urged by a French general.

There are veterans of 1918 who insist that the storming of this key terrain feature was the greatest Marine achievement of the war. However this may be, the Leathernecks took the dominating ridge of the Champagne area, forcing the Germans to withdraw 30 kilometers in order to rebuild their defensive structure.

Pete Ellis was decorated by the French general whose plan he had bettered. But at the age of 39, after returning from France, he was beginning to pay for the long hours and nervous intensity he put into his work. A lifelong bachelor, he had no home or other interests to take his mind off his profession. During the last few years of his life, therefore, Naval hospital records tell a story of a tragically swift decline in health.

These records reveal that in February 1919 he was of medium height and slender build, without physical defects and "fit to perform the active duties of his grade." Less than a year later, he was admitted to the Naval Hospital in Washington with a diagnosis of "psychoasthenia, incident to stressful service conditions." Among the symptoms mentioned were headaches, insomnia, tremors and mental depression.

It is hardly a coincidence that Ellis had devoted the past year largely to intensive research and writing. The result was the strategic plan which remains a monument to his memory, "Advanced Base Operations in Micronesia." Originally classified as a top secret document, it was approved as "712-H Operation Plan" on 23 July 1921 by Major General

Commandant John A. Lejeune.

Ellis predicted that Japan would strike first. "Japan is a World Power," he wrote, "and her army and navy will doubtless be up to date as to training and materiel. Considering our consistent policy of non-aggression, she will probably initiate the war; which will indicate that, in her own mind, she believes that, considering her natural defensive position, she has sufficient military strength to defeat our fleet."

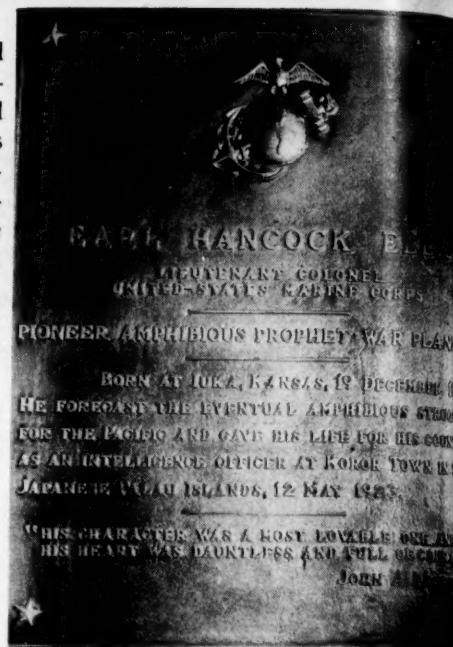
The 30,000 words of Ellis' plan are an amplification of the basic concept presented in the first sentence:

"In order to impose our will upon Japan, it will be necessary for us to project our fleet and land forces across the Pacific and wage war in Japanese waters. To effect this requires that we have sufficient bases to support the fleet, both during its projection and afterwards."

Such doctrines, if made public, would have been enough to stamp Ellis as a jingoist in 1921, for the post-war reaction had swung to extremes of morbid and unrealistic pacifism. He continued to buck the current of popular opinion, nevertheless, by outlining the strategic steps he believed necessary for the defeat of Japan. His first, second and third phases consisted of the seizure of key islands in the Marshalls, the Carolines and the Palau group. These objectives would provide the fleet with bases for reinforcement of the Philippines and the advance on Japan by way of the Mariannas and Bonins.

Ellis did not limit himself to strategy. Tactical planning was worked out in some detail for all three phases. Night amphibious assaults were discouraged, but Ellis concluded that transports with assault troops should approach under cover of darkness and attack in daylight to avoid confusion while securing beachheads. The troops were to be landed in ships' boats towed to the beach by power craft equipped with bow guns. Signal troops, field artillery, demolition experts and other specialists were to accompany the first waves of assault.

These recommendations, it must be recalled, were made long before the invention of the landing craft and amphibious vehicles developed in the 1930s by the Fleet Marine



At Senior School, Quantico, his memory is perpetuated in bronze

Force. Pete Ellis anticipated Fleet Marine Force doctrine, however, when he asserted that amphibious warfare called for specially trained men:

"To effect a landing under the sea and shore conditions obtaining, and in the face of enemy resistance, requires careful training and preparation, to say the least; and this along Marine Corps lines. It is not enough that the troops be skilled infantrymen and jungle men or artillery men of high morale: they must be skilled water and jungle men who know it can be done—Marines with Marine training."

Ellis provided both for naval gunfire and land-based aerial attack. But the carrier was at that time in its tactical infancy, and Ellis asserted that "the development of airplanes is proceeding so swiftly that their characteristics and method of attack can only be foreseen in a limited degree." His tactical planning contemplated bomber "speed up to 100 miles per hour; radius, seven hours' fuel, about 200 miles from base; personnel, about five men; bombs, up to 2,000 pounds." Ellis also foresaw that torpedo planes would "probably be developed."

Some of his estimates were upheld with uncanny accuracy by the events of World War II. Ellis specified 4,000 assault troops in his tactical

plan for an assault on Eniwetok in the Marshalls, and this was approximately the number of Army and Marine troops who secured the atoll in 1944.

Not only was Ellis' plan approved by the Marine Corps in 1921; it became the guide to Marine strategy in the Pacific for years, insofar as the small Corps of that period had a voice in strategy. But Ellis himself paid a heavy price for overwork, and late in 1920 the Naval doctors declared him unfit for active service.

They prescribed an indefinitely extended leave of absence, but it was like Pete Ellis to take a postman's hol'day. Soon he showed up in Santo Domingo as 2d Brigade intelligence officer. And while engaged in this duty, he requested to be sent to Latin America and the Pacific for the purpose of gathering first-hand information as to Japanese designs.

In 1921, as a lieutenant colonel, Ellis was granted leave. Just before his departure, he left a sealed envelope at the Commandant's office in Washington. Upon being opened after his death, it was found to contain only a signed resignation with the date left blank. Pete Ellis had no illusions about the risks awaiting a spy, and he did not wish the Marine Corps to be implicated.

Several months later a cablegram

Future amphibious planners study in this building named after him



was received from Sydney, Australia by a Marine colonel who had Ellis' confidence. The message was signed "Pete" and consisted of the cryptic words:

IMPRATICABLE HERE PROCEEDING JAPAN.

Ellis' route may be traced to some extent by hospital records. Both at Sydney and Manila he was treated for the painful kidney inflammation known as nephritis. And he had been at Yokohama only a few days when a Japanese hotel requested the U. S. Naval Hospital to call for a helplessly ill American civilian.

Again the diagnosis was nephritis. Ellis was released in a week, only to reappear shortly with the same illness.

His leave had been extended upon request during the past year. And in October 1922 he vanished from Yokohama after cabling his bank in Kansas for a thousand dollars of personal funds.

His itinerary is not certain until the following April, when a German trader named Hermann reported meeting him at Kussaie in the eastern Caroline Islands—Ellis' destination after a stay of two months in the Marshalls. These island groups, it will be recalled, figured in the first and second phases of Ellis' strategic plan; and next he took a steamer to Koror in the Palau Islands of the western Carolines, which had been the objective of his third phase.

On the voyage, Hermann testified, his companion was in seemingly good health and spirits. But after arriving on Koror, according to the Japanese and natives, he was frequently ill and drinking immoderately. The end came abruptly on 12 May when Pete Ellis was found dead. The Japanese police, who had kept a close watch over the supposed commercial traveler in spite of his fistic reprisals, seized his effects and ordered a hasty burial.

American investigations were set in motion shortly afterwards; and even as late as 1950, the surviving witnesses were interviewed on Koror by LtCol Waite W. Worden, USMC. Not much new light was shed by these inquiries, but there was one young man in 1923 who might have told a story. This was the young chief pharmacist named Zembsch who was sent to the Palau Islands by the U. S. Naval Hospital at Yokohama

to supervise the cremation of the Marine officer's remains and shipment of the ashes.

Zembsch returned from Koror on 14 August in a shattered physical and mental condition. There were evidences that he had been drugged or otherwise mistreated by the Japanese police, but the experience had left him too shaken for coherence. After two weeks of hospital treatment at Yokohama, he showed enough improvement to make a statement. But on 1 September, before he could be interviewed, Zembsch and his wife lost their lives in Japan's terrible earthquake of 1923.

Thus the actual circumstances of Pete Ellis' death will probably never be known. What military information he may have obtained in the Japanese-mandated islands is likewise a mystery, though it is perhaps significant that he intended to proceed from Koror to Truk and New Guinea.

At least it is certain that some of Ellis' ideas helped to shape the first Orange Plan approved in 1924 by the Joint Board of the Army and Navy for offensive operations against Japan in the event of war. Later Orange Plans were revised to fit changing conditions, but the basic assumption did not become entirely invalid until the emergence of the Rome-Berlin-Tokyo Axis. The last war plan before 7 December 1941, therefore, was known as Rainbow No. 5 and contemplated American and British combined action.

Even the amended Orange Plans, however, owed a good deal to the thought of Pete Ellis. Not only did he point out the route of American invasion in the Pacific; he also did much to provide the means. Although he had been in his grave for a decade when the Fleet Marine Force came into being, its basic concepts were unquestionably influenced by his confidence in offensive amphibious operations as the foremost Marine mission. And without the ship-to-shore attacks on Japanese islands by Marine or Marine-trained Army units, the war in the Pacific could never have ended so favorably in 1945.

Pete Ellis had burned his candle at both ends. But while it lasted, that brief light revealed the menace of Japanese ambitions and showed the way to victory.

US MC

HOW?



WHAT?



when?



WHERE?

why?

THE PRICE OF INTELLIGENCE

It takes more than a set of orders to make a good G-2 officer



By Capt A. B. Waters



THE MARINE LIEUTENANT COLONEL was tired. He had worked hard the past year. Night after night lights burned in his small office where he sat hunched over spread-out maps, the empty silence broken only by the clicking of dividers. Now, he would turn to write down distances and to couple them with time and then, turn again—this time to one of the secret documents which held vital statistics about the Japanese in peace and war.

But now in the spring of 1923 he was finished. The Marine Corps War Plan—his work—filed in the Commandant's safe. Still he was not satisfied. One or two parts of his work needed additional confirmation which meant a visit to Japanese mandated islands. Knowing only too well that these areas were inhospitable to foreigners, yet determined to

have the information, he took leave from the Corps and sailed to the Pacific. This was a bad mistake. Lieutenant Colonel Ellis, who was two decades ahead of his country in strategical planning, was not a professional agent. He didn't come back.

According to General H. M. Smith, the plan in the Commandant's safe "was one of the most prophetic war plans ever drafted . . . many of its salient points served as a blueprint for the actual campaign after Pearl Harbor." Another authority writes that our Central Pacific drive essentially followed the Ellis plan, if not its precise schedule, at least in detail.

How unfortunate it is then, that the plan, or at least the Intelligence aspect of the plan, was not studied before Pearl Harbor. Because, when the war thrust these Pacific islands before the national eye, it didn't take long to discover that we knew almost nothing about them.

The next shock came when we looked for our Intelligence personnel. The few regular officers who had jeopardized their careers to major in the Intelligence field had been snatched by the Office of Naval Intelligence which had no intention of releasing them. We started almost from scratch.

The results were soon evident. On Guadalcanal, a reconnaissance patrol reported that some Japanese

had been observed waving white flags. A captured Japanese petty officer stated at about the same time that he knew the location of a number of civilians who wished to surrender. The G-2, Colonel Goettge, unfortunately concluded from these two reports that a surrender was awaiting. Whereupon the Japanese sailor led the colonel and a party of 24 into a trap from which only three enlisted Marines escaped death. The reconnaissance patrol had mistaken Japanese battle flags for those of truce and the interrogator had failed to catch a prisoner in the big lie.

Thus began an Intelligence comedy of errors, the humor of which is nullified by the vast toll of lives it occasioned.

When the 1st Mar Div was shivering in its entirety from malaria, we discovered that Japan had quietly and cunningly cornered nearly all of the world's supply of quinine. Guadalcanal—was a series of Intelligence mishaps from the original estimate to Colonel Goettge's unnecessary, and thus doubly unfortunate death. Our position of the time is well summarized in the *Island War* by Frank Hough, "We knew nothing of the Japanese except that up until now they had swept everything before them in this war. They were an Oriental people; their tactics, psychology and battle ethics were utterly foreign to us. Our knowledge of the jungle and jungle

fighting proved to be rudimentary. We lacked much in knowledge and in the means to cope with tropical diseases: malaria, dengue, scrub typhus, dysentery and the ever-present fungus infection familiarly known as the 'crud'.

An offer by a submarine skipper, to land a reconnaissance patrol on Guadalcanal for the purpose of contacting a coast watcher, was refused because it might tip off the operation. A few days later two staff officers made a visual and photographic reconnaissance flight over the landing area, an effort which

on Roi-Namur (an operation which achieved strategic surprise). Reconnaissance parties were landed by submarine on Bougainville with excellent information obtained as the result (although the existence of a large swamp in the middle of the landing area was not noticed).

Colonel O. P. Smith, who didn't like the idea of going to Willaumez without knowing something about the place, sent a two-man patrol by PT boat. The patrol returned with vital information and the operation was successful.

The Tinian operation was excel-

had been taken! We continued to underestimate enemy strength and therefore capabilities. Iwo held 22,000 Japanese rather than the 14,000 estimated by Intelligence. Hydrographic Intelligence was generally poor; Counter-Intelligence was weak. As late as 1945 there was a major security leak in Honolulu which enabled General Kuribayashi to learn that he would be attacked by one battleship, 18 destroyers and 40 transports carrying the 3d, 4th and 5th Marine Divisions. Some of the early mistakes were the inevitable result of earlier Intelligence inertia and could never be corrected. Take Guam for instance.

Guam, the largest and most southern island of the Marianas, had been occupied by the Navy and Marines since 1898. Every prewar examination of the coming conflict with Japan had concluded with the premise that the great battle of the navies would come with the attempted repossession of Guam. Its recovery had long been a favorite operation in these imaginary conflicts which are fought across sheets of paper at the Marine Corps Schools.

This emphasis should have insured a plentiful amount of Intelligence. However, General Smith remarked, "Little effort, except by a Marine reconnaissance officer in 1936, had been made to explore Guam from a military point of view in case we had to fight for it. Few attempts had been made to collect and record the data required for its defense. I believe our forces had similar difficulties when we re-entered the Philippines late in 1944."

By the end of February, 1944 we had effectively flanked the great bastions of Truk and Rabaul and planned to strike north into the enemy's intermediate defense line—a move which would both seal off Truk and put us within bombing range of Tokyo.

Somewhere around April, 1944 the III Amphib Corps G-2, upon discovering our lack of Intelligence on Guam, undoubtedly cursed his predecessors who, with a reasonably minimum effort, could have established an Intelligence network among the very loyal and friendly Guamanians. In its simplest form, this would have been not unlike the Australian coast-watcher system in



Saipan airstrip—Intelligence missed by a thousand yards

also chanced a tip-off without realizing the information a reconnaissance party might have gained. For example, aerial reconnaissance did not discover that only 600 Japanese troops were on the island. This meant, among other things, that some of the combat troops could have been used during the first few days to help move precious supplies from precarious exposure on the beaches.

So the war began. Some of the early mistakes were corrected. Submarine reconnaissance to obtain tidal information was effectively employed

lent from an Intelligence standpoint, but from any standpoint such an operation is rare.

Some of the early mistakes were not corrected. The Japanese continued to intercept, and make use of, our radio messages. Our photographic interpretation generally left much to be desired. On the Saipan operation, one battalion was directed to land with its right flank at the end of an airstrip. It did this only to find itself in the center of another unit's area. The airstrip had been lengthened almost a thousand yards since the last aerial photographs

the Solomons. Guamanian "sleeper" agents, following earlier instructions, could have been contacted by our submarines and the collection problems greatly simplified as a result. But if the JCS back at the Pentagon had realized what was happening on Guam in this spring of 1944, they, too, would have cursed. For solely by lack of Intelligence they lost the chance to make the greatest strategical move of the Pacific War!

The first effective factor was the poor Intelligence concerning Japanese naval and air capabilities. Through that summer of 1943 it was becoming increasingly clear that the Japanese suffered from no shortage of manpower, but a very serious one in shipping; and that their air force was sustaining losses that could not

as the seizure of Saipan. We would have had a practically bloodless operation instead of the 7,800 casualties we actually took on Guam; and we would have caused severe damage to either Japanese reinforcements or counter-landings which invariably met disaster from our ships and planes.

The failure to estimate correctly Japanese naval and air losses led to an even more disastrous conclusion on the national level. American officers, who misunderstood island outpost strategy and misunderstood the Japanese Bushido code, were far too impressed with the fanatical Japanese ground resistance at Iwo and Okinawa. The sum of their reports presented a very pessimistic future, and it was this picture which the

was too ominous a threat to be ignored and in consequence it shaped our tactical thinking during the closing weeks of the war . . ." By shaping our tactical thinking it provided the reason we did not proceed to Berlin, despite Mr. Churchill's extreme objections, and thus alter our entire strategic position. Moreover, forgetting the dubious sources (very possibly Soviet inspired) which gave rise to this theory, a qualified student of Germany should at once have denied the capability of the national temperament to effect any such scheme in strength. The Werewolves theory later proved equally fallacious.

The Marines, being the smallest and most subordinate of the services, and being very busy supplying the effort necessary to dissipate forever the ghosts of Gallipoli, probably had the best excuses for being caught flagrantly delinquent. We certainly were not alone. In 1940, Captain Zacharias, USN, noted that the Fleet Intelligence Center in Hawaii was located "in a corner of the custom-house, tucked away in a two-room box, housing two officers, one yeoman and a translator. This was the entire force on the eve of war." Zacharias, who had studied the Japanese since 1920 and certainly knew a great deal about them, was himself ordered from ONI to take command of a cruiser a few months before Pearl Harbor. Enroute to his ship, he stopped at Pearl Harbor to endear himself to a ranking admiral by stating that "if Japan decided on war with us she would open hostilities with an air attack on our fleet without a declaration of war, on a weekend, and probably on a Sunday morning, by launching planes from carriers so that they could fly down wind from a spot as far away as possible in order to facilitate the escape of the ships of the attacking forces."

The Army was apparently in even worse shape. Brigadier General Eisenhower discovered shortly after December, 1941 that "within the War Department a shocking deficiency that impeded all constructive planning existed in the field of Intelligence . . . the Intelligence Division could not even develop a clear plan for its own organization nor could it classify the type of information it deemed essential in determining the purposes and capabilities



Acme
Yalta—we pay the price for erroneous Intelligence

be borne forever. This state of affairs existed before the potent carrier strike at Rabaul, which cost the Japanese Second Fleet its cruiser screen, and the incredibly successful Truk strike of February, 1944 which met relatively light Japanese air defenses.

The second factor was Guam, itself. The Japanese, during the first two years of their occupation, maintained a garrison of only 400 to 700. They improved the airfields, but built little in the way of defensive installations until the fall of the Marshalls and the neutralization of Truk suddenly awakened them. Until the early spring of 1944, the garrison never exceeded 700 men, and was much smaller than that most of the time. Had we maintained contact through Guamanian agents, we would have learned of the weak garrison and planned accordingly for the seizure of Guam.

Such a move would have accomplished the same strategical goals

President took with him to Yalta. Erroneous Intelligence was largely responsible for Russia's ludicrous entry into the Pacific war which cost the Western world a price not yet calculable.

Significantly enough, and for the same reasons, we blundered badly in Europe. For months, G-2 reported the existence of a Nazi National Redoubt in the Austrian Alps. This impregnable position, which allegedly had been well stocked with weapons and materiel (including aircraft plants), would be held by certain Nazi fanatics to keep alive the "myth" until occupation troops had left Germany. General Omar Bradley afterward admitted, "Not until after the campaign ended were we to learn that this Redoubt existed largely in the imaginations of a few fanatic Nazis. It grew into so exaggerated a scheme that I am astonished we could have believed it as innocently as we did. But while it persisted, this legend of the Redoubt

of our enemies." General Omar Bradley adds an Amen: "The American army's long neglect of Intelligence training was soon reflected by the ineptness of our initial undertakings."

Nor were the services alone ill-prepared. Pearl Harbor was by its very nature a joint national debacle just as Yalta and later Potsdam were joint international debacles. In each case the right people didn't know . . . the right people lacked Intelligence.

Ever since World War I the connotation of Intelligence to most Americans has been limited to the Mata Hari tradition of exotic women, perfumed boudoirs, international express trains and all the rest of the

instrument of diplomacy. We fail to differ between *use* and *need*. When the war brought need, we mass produced . . . and we wasted. Almost the same thing on a smaller scale happened after World War II.

In that sense, then, the pre-war services have some excuse for their lack of attention to Intelligence.

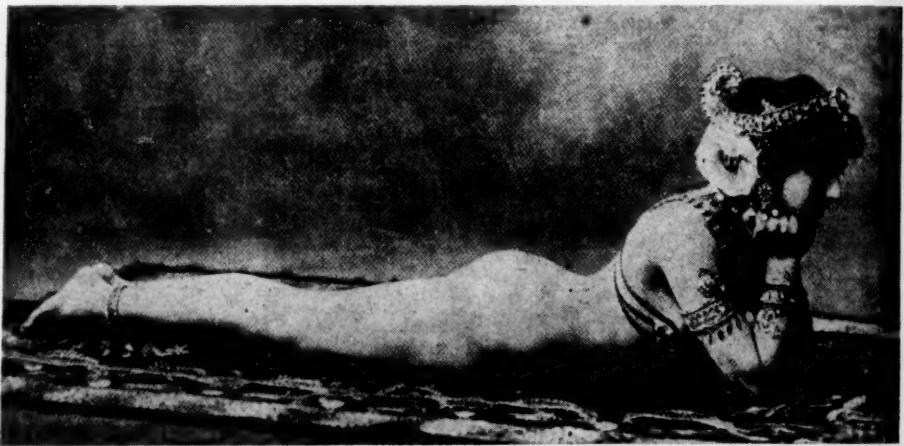
Yet there are two factors working against this alibi. The first is that presumably each service had its own war plans that depended for validity on continuing Intelligence estimates. We in the Marine Corps had studied the concept of amphibious warfare since 1920; indeed, we made our first assault landing in the Bahamas in 1776 and had completed over 160

classical battle in which espionage failed to play its part.

The weapon is older than (and sometimes intrinsically related to) woman's oldest profession. In 505 B.C., Sun Tzu wrote, "What enables the wise sovereign and the good general to strike and conquer, and achieve things beyond the reach of ordinary men, is foreknowledge." In the same treatise he instructed, "Where the object be to crush an army, to storm a city, or to assassinate an individual, it is always necessary to begin by finding out the names of the attendants, the aides-de-camp, the doorkeepers and sentries of the general in command."

Twenty-four centuries later, in

Mata Hari — the tradition of exotic women and perfumed boudoirs. She needed no wool to pull over eyes



Bettmann

trappings. The American people, caught in the boa-constrictor grip of isolationism, wanted not a bit of this nasty intrigue. They were right about the description but they failed to realize that this is a small part of a national Intelligence effort.

The attitude which pervaded, and still pervades all levels of American thought including that of the military, is one of extreme naivete. A British observer has remarked that we are black and white in our thinking — that it is either hero or villain like our moving pictures. He holds that we entertain few nuances of thought: a given issue is all right or all wrong, nothing in between. If we like something or need something, all stops are pulled; we mass produce it and end up wasting half the production.

If this is true it tends to explain our diplomatic position of the 20th century which, of course, affects the military services in that they are an

such landings before World War II. We should have realized the value of Intelligence to this type of warfare even more than to other types and trained far more people in it than we did, even at the expense of other activities. Further, a number of our officers believed that war with Japan was inevitable and that we would be involved in an aggressive amphibious role similar to the one planned by LtCol Ellis. And yet, as we have seen, very little was done in connection with the Intelligence requirements of this plan.

The second factor is a lack of awareness of the past. Napoleon wrote in his *Reflections* that "the knowledge of the higher arts of war is not acquired except by experience and the study of history of wars and the battles of great captains." Yet even the casual reader of history could not but be impressed with the very important role of Intelligence through the ages. There is not a

1914, a Russian army was crushed because a German staff officer named Hoffmann found out the names of his opponents. Shortly after the outbreak of war, Russia learned that East Prussia would be weakly defended while von Moltke struck at the Belgians, French and British. Two Russian armies under Samsonoff and Rennenkampf were hurried forward to exploit the situation. During the Russo-Japanese war ten years earlier, these two officers while at Mukden, had publicly quarreled and one had struck the other. The German, Hoffmann, who had witnessed this quarrel while a member of the German military mission to Russia, had not forgotten it. With his knowledge of Russian temperament, he decided that here was a bit of first class Intelligence. In fact, he based his entire strategy on the hatred between the enemy commanders. Hindenburg and Ludendorff arrived, approved his plans,

and took charge in time to execute them successfully. The ensuing battles of Tannenberg and Allenstein, during which the Russian generals refused to cooperate with each other, were imposing German victories which dealt Russia an opening blow from which she never fully recovered.

When Genghis Khan invaded China he did not bother with a costly assault of the Great Wall. Instead he bribed his way through one of the gates. Napoleon relied heavily upon Intelligence, his instrument being the Imperial Police Service under Fouché and Savary. For the Franco-Prussian war, Prince Bismarck hired a Prussian named Wilhelm Stieber who subsequently maintained 30,000 agents and informants in the invasion zones of France to pave the way for Moltke's invading armies. A few months before the First War, Russia obtained the *Aufmarschplan*—deployment order—of the Austro-Hungarian Empire by blackmailing and bribing Colonel Alfred Redl, chief of the Austrian army's secret service. Hitler, not unlike Bismarck, pushed through the Maginot Line by buying his tickets in Paris. His Stieber, incidentally, was Admiral Canaris, a protégé of Colonel Walter Nicolai who ran Ludendorff's Intelligence.

America and England are also represented. One of Stieber's contemporaries was Lafayette Baker, chief of the U. S. secret service during the Civil War. While the Union generals did not profit much from Alan Pinkerton's activities because many of his reports were inaccurate, they would have been wiser to have heeded the reports of the balloonist, Professor Foote, to whom little attention was paid. Both the North and the South, apparently aware of the ancient Cleopatra, successfully employed female agents. One of them, Emma Edmonds, repeatedly used the disguise of a male Negro.

The American attitude toward Intelligence since the Indian Wars is not without historical precedent. It is analogous to that of the medieval Age of Chivalry which held the weapon in repugnance while the Mongols were employing it very skillfully and advantageously. At a time when the Christians knew virtually nothing about the Mongols, Subutai organized a comprehensive



Bettmann

Genghis Khan bribed his way

espionage network in both Hungary and Poland. Then, with full knowledge of the conditions in these countries, he launched his invasion of Europe.

World War II caused a better understanding of Intelligence despite the spate of films stressing the cloak and dagger side. Certain responsible officials, including many military officers, began to realize the fang and claw nature of things and concluded that we had better undertake a systematic collection of information—political, economic, military—on our enemies in order to determine what they were going to do next, and on our friends in order to determine how much they could help us prevent harm to themselves and ourselves.

A project of this sort is known as positive Intelligence. It involves the collection of facts, the collation and analysis of these facts, the conclusions drawn if any, and the dissemination to interested and authorized agencies. On the strength of the facts in different spheres of a nation's

activities, then, that nation's intentions are discovered as well as its capabilities in carrying out those intentions. Unlike the ancient days when publications were either nonexistent or limited, most of today's facts are obtained by overt means—by a close study of available references such as books, newspapers and radio broadcasts. A few necessary facts are gotten by covert means—espionage.

Certain shocking post-war events focused national attention on the need for the other main branch of Intelligence. With the disclosure of the Hiss and Rosenberg cases, among others, America learned that the enemy was among us with a mission both of destroying us from the inside and stealing our most vital secrets. It is a function of Counter-Intelligence, the poor relation of espionage, to prevent this.

The need for it is hardly new. In 1935 Germany and Japan began a concerted joint espionage effort against us which continued throughout the war. To combat or counter

Emma Edmonds—master of disguise

Bettmann



such activities, it is necessary first to detect them, then to eliminate them. The processes involved resemble those of espionage. They are often complicated and costly — generally sensitive — they can be sinister. In this country, generally speaking, the FBI is our primary Counter-Intelligence agency, although all agencies and military services are responsible for their own security. In the military, however, trial powers for other than our own personnel are restricted to areas outside the United States.

Positive Intelligence, especially on a large scale, is such a complicated process that centralized control is necessary to avoid wasteful duplication of effort. To answer this need, the Central Intelligence Agency was established after the war and given a mission of coordinating the joint efforts of all Intelligence agencies into a systematic and understandable single national effort.

America did not have nearly enough properly trained personnel to run such an organization. The only way to get them was to train them. This deficiency, coupled with the increasing secrecy and hostile attitude of the Soviet bloc, explains the initial slow and awkward steps of the CIA baby. Yet anyone acquainted with the situation can't but admit the subsequent growth. It has been extremely encouraging and has occurred much more rapidly than professional experts even dared to hope. More years will pass, however, before the child grows a beard. As Eisenhower noted in 1942, "No longer handicapped by lack of money, the Chief of Staff did everything possible to repair the neglect of many years; but no amount of money or emergency effort could rapidly establish throughout the world the essential base of observers and fact finders."

• SINCE WORLD WAR II the Armed Forces have tried to renovate their peacetime Intelligence organizations. While partial success has been achieved, in some instances the effort has been blocked by the same kind of thinking that prevented pre-war development.

The majority of intelligence assignments is placed in the "tour" or "cruise" category. These factors alone indicate either an incomplete

grasp of the problem or, recognizing the problem, a failure to provide the complete answer to it.

One obvious reason for the difficulty is the very nature of Intelligence work. Unlike other military activities, it mainly is concerned with the abstract, the unknown quantity, the factor "X." As such, it can't be counted nor can it be ordered in job lots. It is in a constant state of fluctuation, and its evaluation process is subject to a bewildering variety of factors — any one of which is capable of nullifying all others under certain conditions. If similitude exists, the Intelligence process is akin to a scientific playing of the Wall Street market.

preciate the significance of Intelligence and other information available to them."

The entire Intelligence field is of inestimable interest to the Marine Corps. The elevation of the Commandant to a JCS advisory seat for matters amphibious has placed the Corps in an entirely new position. Like any other promotion, the responsibility is as great as the honor. One does not deal profitably at the highest strategic level without a wealth of information at his command. The onus of processing this into Intelligence and properly advising the Commandant in regard to it lies with his staff, who simply must possess a deep knowledge and pen-



Acme

Arnhem: 7,000 casualties . . . the Germans were forewarned

It is the abstract quality which often makes a proper understanding of Intelligence difficult. If it is not understood, its strength can hardly be appreciated. This lends it a negative quality which in turn, allows its weaknesses to grow to the extent that the Intelligence Officer becomes the weakest officer on the Commander's staff. Exactly this happened before the last war when a colonel was War Department G-2 as opposed to brigadier generals in the other GS slots, and when the Fleet Intelligence officer in Hawaii was a lieutenant commander opposed to captains. Regarding the latter, it is not surprising that one of the Pearl Harbor Committee findings was that the Hawaiian Command failed "to ap-

trating insight of the subject.

Since plans should only be formulated on the basis of Intelligence, the collection and evaluation processes are of great interest to us. And, as we grow toward our allowable size, we shall be asked for more persons to join this work. Since we want only good Intelligence, of course, we want to provide only well trained people for the job.

So much for the high level or strategic side of Intelligence. There remains the tactical side which actually involves the Corps to a greater extent. The authorized increase in Corps strength, coupled with the especial Navy-Marine command relationship for amphibious operations, adds to our Intelligence responsibil-

ties. For any given operation of Corps size, the Corps G-2 must perform the functions normally assigned an Army G-2.

It is true that in the planning phase the bulk of positive Intelligence flows down from higher echelons. This is too often construed as an automatic process. The peculiarities of amphibious warfare forbid automatism. Incoming general Intelligence must be sorted to select pertinent facts, collated and analyzed in view of its effect on the particular operation, and then given to the lower echelons *in time for them to employ the same process*. Additional specific Intelligence must be collated later. The advent of new weapons—atomic, chemical, biological, psychological—demands increased specific Intelligence which makes the formulation of a collection plan a complex and exacting job. To write such a plan successfully also requires an intimate knowledge of the collection agencies, their capabilities and limitations—"who" can give you "what," the best and the fastest.

Once the operation commences and the flow of information reverses, the responsibility is wholly ours for we are the collectors as well as the collators, analysts and disseminators. If we fail to discover Intelligence, knowledge of which would have prevented the enemy from altering the existing tactical situation in his favor, the error is irreparable and is ours. In the fast-moving war of the future we cannot afford many major errors. Yet with the amount of information a corps will receive, error and confusion are all too easy unless highly professional personnel are available for the production of Intelligence.

Concurrent with the above phases is the Counter-Intelligence function. Perhaps the most agreed dictum of war is the value of strategical or tactical surprise. Toward the end of World War II, at that heartbreaking point where final victory was almost certain, yet still far away, General Montgomery planned a strategic maneuver of first magnitude: the paratroop drop on Arnhem. Victory hinged on surprise. In order to alert the anti-Nazi Arnhem underground, a Dutch resistance agent named Christian Lindemanns was employed. Lindemanns, known also as King Kong, hastened to Arnhem.

Instead of reporting to the underground, however, he went to the office of Colonel Kiesewetter of the Abwehr. As a result of this renegade's act, 7,000 British troops became casualties and the German war was very possibly prolonged many months.

To insure surprise and to prevent the covert penetration of the command by the enemy is the function of Counter-Intelligence. The loss or theft of classified material, the investigation of security violations, the apprehension and interrogation of unauthorized personnel in or around the command area, and the obtaining of legal evidence for trial purposes outside the United States—all fall within the purview of Counter-Intelligence. The job is constant and sensitive and calls for discreet methodology and unusual tact plus a 24-hour-a-day alertness.

These are the principal functions of the G-2. A smooth running section is vital to them and can produce a great deal of information concerning the identity of the enemy, his location and his strength. But this is not Intelligence! From the valid information available, coupled with a full pre-knowledge of the enemy—history, tactics, temperament, technology, psychology, physiology—the G-2 must tell the commander what the enemy wants to do, what he can do, and what he will do and when. This is what the commander must have if he can be said to have been given good Intelligence!

Unfortunately, we do not have many officers in the Marine Corps today who understand the entire function of Intelligence. Too often an attitude of suspicion and contempt is maintained toward the subject. During the war when trained Intelligence officers were simply not available, commanders received poor Intelligence which, acted upon, yielded unpleasant results. Then, when they occasionally received good Intelligence, the bitter taste sometimes prevented them from acting on it—again with unpleasant results. The final effect has been, in some cases, to cause commanders to emit an obscene word when the subject is introduced.

Equally as unfortunate as failure to comprehend is the recognition of one of the parts as the whole. Captain Zacharias once asked a flag offi-

cer the status of Intelligence work in his force. He replied, "We don't need any Intelligence work. There are no Communists in our ships." Not long ago a Marine field officer related how, by a mix-up in the Detail Section, he had been ordered to ONI—his first Intelligence assignment. He described his job, which was one of the more mechanical in Intelligence, and concluded, "I learned the work very thoroughly in a short time. It is obvious that anyone with a little effort can become a crackerjack Intelligence man." In either case one small tree had become the entire forest in these officers' minds.

A few officers have always recognized the need for sound Intelligence. Finding themselves without it during the war, they became their own G-2s as a better-than-nothing step. Quite obviously, however, on neither division nor corps level does the commander have the time which a proper fulfillment of the G-2 function requires. Further, there is an inherent danger to the commander when he attempts this, simply because it is human nature to proceed deductively when one is in such a very responsible position—to establish conclusions and work back to the facts. Hitler constantly did this and, to a lesser degree, so did Prime Minister Churchill and President Roosevelt.

The combined effect of this situation accounts for the very small number of persons whom we are training to be legitimate Intelligence officers. Our most extensive effort is language school followed by one possibly pertinent tour and then a complete shift of activity unless somehow, and with great loss of professional reputation, the concerned officer manages another Intelligence cruise. This can not be called a legitimate training program! The bulk of our officers in G-2 sections are there without any previous training—are there only by virtue of a set of orders. After two years of such duty, they are then fatuously regarded by Headquarters as experienced Intelligence officers.

Such a policy directly contradicts the lessons of history and the living advice of able men who have devoted their own lives to Intelligence. A compilation of the minimum qualities demanded by a competent Intel-

ligence officer includes both natural and acquired abilities. Of the former, in addition to the moral attributes of any officer, are an exceptionally good memory, a gift for languages, a gift for acting, a gift for detecting and great imagination and resourcefulness. Concerning acquired qualities, the officer's mind must be both flexible and objective and must be trained to worship at the altar of fact as opposed to that of Delphi. From formal education and continuing study he must gain and hold a tremendous general knowledge of history and geo-politics, a lesser knowledge of practical psychology and international law, and an exact knowledge of at least two foreign nations including their languages.

These attainments are perfectly possible. Ignoring the diplomatic services of all countries and the Intelligence services of France, England and Germany, we have had at least three such officers in the Marine Corps during the last decade. One is now dead, one retired and one in a position, through no fault of his own, where he can least effectively utilize his impressive talents. It is true that a full development of such abilities demands a minimum of 20 years' continuous effort. It is equally true that a competent G-2 must possess these qualities and must therefore be allowed the necessary time for acquisition. Perhaps there is some comfort in that the initially qualified officer becomes more an asset than a liability after five years of training.

Not one of these qualities is superfluous. The duties of a division or corps G-2 demand them. Suppose that we have a corps headquarters in garrison somewhere in Europe. An espionage case develops. The enemy is trying to penetrate our headquarters. How can a G-2 possibly supervise an effective exploitation of the case without the background demanded above? How can he possibly conclude a case to his government's benefit without a knowledge of the laws of evidence? Immediately after the European war our security forces had a field day locking up people. A lot of these individuals, the blood scarcely dry on their hands, were later released because insufficient evidence existed for their trials or convictions. Subsequently, we have arrested espionage agents only to

find that the arrests were premature and no grounds for trial had been established. This meant that guilty and dangerous persons were turned loose because our laws forbid holding a man without trial, (a fact for which we should all be very thankful). Is it any wonder that the FBI has since its inception required its agents to hold an LL.B. degree?

The need for linguistic ability is very much in point. A belief currently exists that one is able to know a foreign country without knowing the language of that country. Any linguist at once realizes the sheer effrontery of such a belief. Try translating the German word, *gemütlichkeit*, or the word, *Lebenskunstler*. No English translation for these words can be made. Yet, when a Viennese Austrian employs them a wealth of meaning is included. Quite obviously, language is the most coherent communicative process we humans enjoy, and to deny its mirror-like reflection of the minds of its owners in analysis of those minds is tantamount to judging a race horse by the shape of its ears. One very keen observer of the contemporary scene has stated that the major source of our occupational difficulties in Europe has been the refusal of officers and men alike to learn the language of their locations.

Aside from the combat G-2 function, the Intelligence officer will need these same qualities in any Intelligence billet whether it is a high level policy board or an ONI desk. And surely the Naval Attaché—that most important overt observer—will be a better producer if he is so armed.

In view of this, and if the Corps is ever to boast of its Intelligence, the argument that a regular officer must not enter an Intelligence career becomes untenable. General Omar Bradley, in speaking of an Army considerably less than our present authorized strength is very enlightening: "For too many years in the preparation of officers for command assignments, we had overlooked the need for specialization in such activities as Intelligence. It is unrealistic to assume that every officer has the capacity and the inclination for field command. Many are uniquely qualified for staff Intelligence duties and indeed would prefer to devote their careers to those tasks. Yet instead of

grooming qualified officers for Intelligence assignments, we rotated these through conventional duty tours, making correspondingly little use of their special talents. Misfits frequently found themselves assigned to Intelligence duties. And in some stations G-2 became a dumping ground for all officers ill-suited to line command. I recall how scrupulously I avoided the branding that came with an Intelligence assignment in my own career."

Another logical and not so obvious a reason exists for the Intelligence career program. Progress can be defined as a series of short steps over short distances in a long time. It is very doubtful if our present automotive industry would be in its prosperous condition had Henry Ford been more interested in cars than cars. An officer primarily interested in command has quite enough to do by mastering the complexities of his own forces. Once he uncovers certain problems inherent in the subject of his interest, he attempts to solve them by experiment and innovation. An Intelligence officer is in the same position. From his thoughts and those of his associates come the faltering little steps of progress.

Sufficient talent exists in the Corps for the needed training program. Most of the younger officers now attending language schools and functioning in Intelligence activities would be desirous of and suitable for professional careers. Others would be available on a voluntary basis. Once a training plan is established, the eligibles can be screened by a joint Marine-ONI-CIA-FBI board, and the proper number selected. Each year the additional number required would be selected in the same manner.

It should be emphasized that, to succeed in this field, the young officer must have a thorough grounding in Marine combat concepts, since the users always have a better idea of what is needed and the frequent difficulties, if not impossibilities, of attainment. Ideally, the young officer should have four years in divisional units prior to commencing an Intelligence career. To meet the present emergency, however, this could be shortened to half the time, but not less than that.

To insure the best people, the

bogey of promotion has to be dispelled. These officers would receive an extraordinary training and part of it would be with the FMF. It is unreal to assume that an officer who knows intimately every aspect of an enemy force is, with other factors equal, any less fit to be a general than his contemporaries in other fields.

The opponents of specialization are forced to admit that specialization already exists: supply, artillery, engineer and communications, to name a few. Of all the branches, Intelligence comes closest to the category in which medicine or dentistry is placed. A corpsman can stop the flow of blood and ease the bite of pain, but the surgeon is required to operate.

Another argument involves what

well qualified few are in all probability either working for a U. S. agency or teaching in universities. In the first case they won't be available for recall to the Corps; in the second, they will be either taken by priority outside agencies, or, if a few should slip through to the Corps, they will probably be taken by ONI.

An equally pressing need exists for Counter-Intelligence officers. Proper security is dependent on education somewhat more extensive than posters in offices. There are far too many daily security violations — too much loose talk, too much said over telephones, and too much said while telephones are being used or while carpenters work on the office door. If we are to succeed in the mission assigned us, these have to be eliminated — it therefore is a job for our

tage operations. Because of the fertility of these areas for intrigue, the enemy populace is skilled in its work. And there are enough cases on record to prove the agent motivated by ideology is a more difficult agent than one motivated by money.

A Counter Intelligence officer recently remarked that he didn't have to learn a foreign language since he was taught at school that you used interpreters. You certainly can use interpreters, but you are quite worthless as a Counter-Intelligence officer if you do. Any indigenous interpreter has to be investigated for reliability. Time rarely exists for necessary investigation, and a refugee from enemy territory can't be investigated. On a Keeler polygraph test, an interpreter reduces the accuracy over 50 per cent. Further, the most



Prisoner, interpreter, interrogator — accuracy often suffers in the process

has been optimistically called "our prosperous group of trained reserves." Analytical work, above all else, employs the process of continuity. The professional earns his title by living with his work 24 hours a day. It is the very core of his existence which is one reason some admirably qualified officers don't like the Intelligence field. The reservists, in a majority of cases, are only partially qualified which explains the preponderant number of lawyers, writers and historians in the G-2 sections during the war. The greater number of these returned long ago to peacetime pursuits where they have lost the necessary continuity. A

Counter-Intelligence agencies.

Its linguistic function is even more difficult because of time, opportunity and linguistic factors. If an enemy agent is apprehended, the G-2 wants to know his mission as soon as possible, both for what Intelligence value it holds and so that additional security measures may be taken if necessary. For expeditious results, the luxury of an investigation must be replaced by excellent and rapid interrogation. If the Corps fights in the Orient, the Middle East or in Europe, it will fight in the midst of Communist adherents or sympathizers, some of whom will be engaged in covert espionage and sabo-

amateur interrogator realizes that phraseology, intonation and the other elements which comprise the psychology of interrogation are his main weapons.

It can be seen from the above that the Marine Corps has a very long way to go before it can boast of minimum Intelligence qualification. We should never forget that one factor, more than any other, is responsible for making us the best. That is training. Our Intelligence situation is by no means hopeless, if proper steps are at once taken. We can take them; indeed we must. For in the next war we shall be only as good as our Intelligence. USMC

The Marine Corps Association's 1954 PRIZE ESSAY CONTEST



Capt Canzona

Sgt Shaw

LtCol Wade

MajGen Bare

Maj Walker

1953—Editor-in-Chief presents winners with \$2,000

THIS YEAR, AS LAST, THE MARINE Corps Association will award a total of \$2,000 in cash for the best essays on any subject in the field of amphibious warfare.

In 1953, it will be remembered, top prize of \$1,000 in the contest was carried off by LtCol J. J. Wade, Jr., for his essay *Of Mortars And Men*. The prize-winning article set off a storm of controversy which produced such a series of rebuttals and letters to *Message Center* that LtCol Wade finally wrote... "Gentlemen, I did not question motherhood . . . just the mortar."

The GAZETTE staff hopes that the Marine Corps Association's 1954 Prize Essay Contest will produce as fine a group of essays as last year's contest. The rules for this year will be essentially the same as for 1953, with *one exception* — enlisted men are not restricted in their essays to the field of amphibious warfare. They may write on any subject that includes topics of general interest concerning Marines.

In order to encourage and provide diversity of thought, essays will be considered in three groups determined by the status of the author as an active, inactive, or retired member of the Armed Forces or as a civilian: Group I, Field Officers and Civilians; Group II, Company Grade

Officers and Group III, enlisted. A prize of \$500 will be awarded the author of the best essay in each group. An additional \$500 prize will be awarded the best essay of the three finalists.

Irrespective of the award of the "Prizes," one or more essays may receive "Honorable Mention," if of sufficient merit to justify the award. Essays awarded "Honorable Mention" will receive such monetary compensation as may be adjudged by the Editorial Board.

The following rules will govern this competition:

(1) Essays awarded "Prize" or "Honorable Mention" are for publication in the MARINE CORPS GAZETTE. Essays not awarded a prize or honorable mention may be published at the discretion of the Editorial Board, and the authors of such essays will be compensated at the rate established for articles not submitted in competition.

(2) Essays should not exceed 5,000 words.

(3) All essays must be typewritten, double-spaced, on paper approximately 8½" x 11", and must be submitted in triplicate, each copy complete in itself and firmly bound together.

(4) The name of the competitor shall not appear on the essay. Each

essay heading must contain an identifying phrase consisting of the last five words of the essay, in addition to the title. This phrase shall appear:

- (a) On the title page of the essay.
- (b) On the outside of a sealed envelope containing the name (rank and serial number, if any) of the competitor.
- (c) Above the name and address of the competitor, inside the envelope containing this identification.

The envelope containing the author's identification will not be opened until winning essays have been determined. Essays and identifying envelope must be mailed in a large, sealed envelope marked "Prize Essay Contest Group I, II, III" (as appropriate) to the Secretary-Treasurer, Marine Corps Association, Box 106, Marine Corps Schools, Quantico, Virginia.

(5) Essays must be received by the Secretary-Treasurer, Marine Corps Association, prior to 1 October 1954.

(6) Awards will be made by ballot and without knowledge of the names of the competitors.

(7) The attention of contestants is called to the fact that an essay must be original and should be analytical or interpretive.

US MC

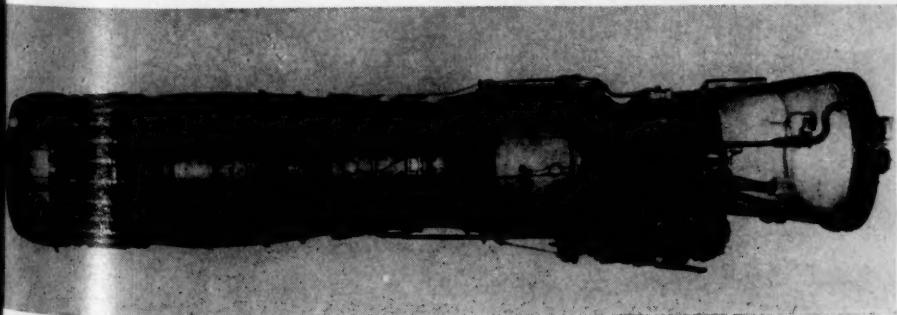
in brief

Major General Edwin A. Pollock accepts the initial recording (right) of a march, *The Division Commander* from Technical Sergeant William C. Jolly, the composer. Sergeant Jolly dedicated the march, which took second place in the John Phillip Sousa Armed Forces March Contest, to General Pollock, his former commander in the 1st Mar Div.



The Navy has recently developed an instructional television system (right) that does away with costly studio equipment which previously made educational TV too expensive.

The Army Quartermaster Corps is currently studying all aspects of the radiation sterilization of foods to determine the most effective methods of preserving specific foods by irradiation. The objective is to learn whether foods may be preserved by irradiation as a substitute for present treatments without detracting from the natural odor, color, flavor and texture of the foods.



Marine Corps Gazette • July, 1954



The 1st Mar Div reunion will be held on August 6, 7 and 8 in New York City's Hotel Astor.

The new look in clinical thermometers (left) is the first change since the introduction of the mercury column type in 1867. Developed by an army doctor, the new electronic thermometer gives an accurate temperature reading in five to seven seconds, and will obtain oral, rectal or skin temperatures by the use of interchangeable probes.



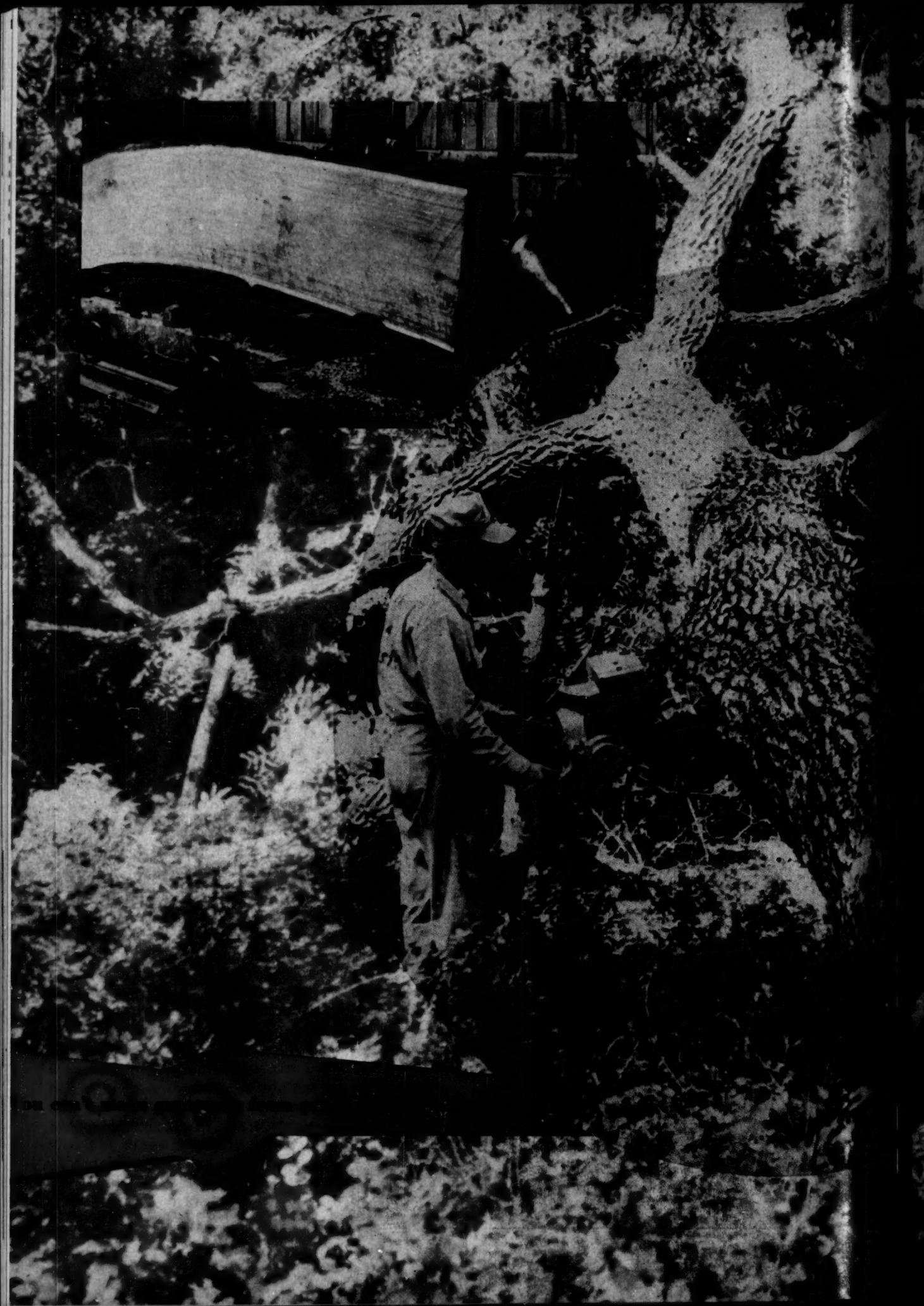
According to a recent directive, Marine Corps privates are now required to serve a period of six months in grade before becoming eligible for promotion to private first class.

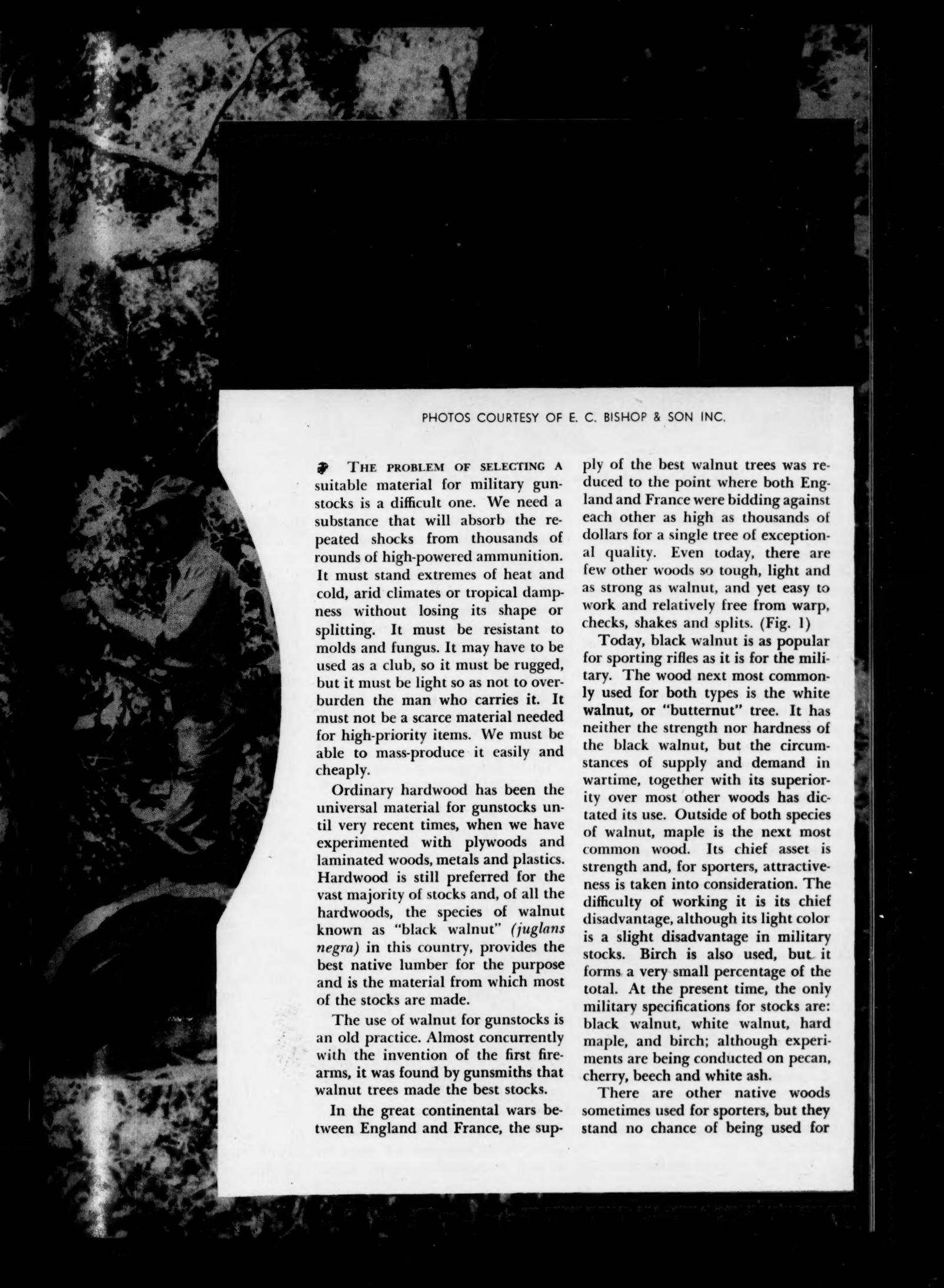
Plastic dinner-ware is replacing the old mess-hall china-ware in Marine Corps messhalls. Scheduled to get the deep six are: Gravy bowls, sugar bowls, cups, dishes, pitchers, plates and platters.

A meritorious enlisted man's rotation program has begun between the 1st and 3d Mar Divs. To be eligible, a man must have at least six months left on his present overseas tour, either in Korea or Japan, and he must have a clean record.

The Navy has a new air-to-air guided missile called the Sparrow. It is rocket powered, fully maneuverable, light and compact enough to be carried in multiple units and launched from fighter-type jet planes.

The new Pratt & Whitney J-57 Turbojet engine (left) is equipped with an afterburner (on the left of the tube), which greatly increases the power of the jet, providing the high thrust power which makes it possible for fighter aircraft to fly faster than sound in level flight. The Air Force's supersonic Super Sabre is powered by this engine.





PHOTOS COURTESY OF E. C. BISHOP & SON INC.

THE PROBLEM OF SELECTING A suitable material for military gunstocks is a difficult one. We need a substance that will absorb the repeated shocks from thousands of rounds of high-powered ammunition. It must stand extremes of heat and cold, arid climates or tropical dampness without losing its shape or splitting. It must be resistant to molds and fungus. It may have to be used as a club, so it must be rugged, but it must be light so as not to overburden the man who carries it. It must not be a scarce material needed for high-priority items. We must be able to mass-produce it easily and cheaply.

Ordinary hardwood has been the universal material for gunstocks until very recent times, when we have experimented with plywoods and laminated woods, metals and plastics. Hardwood is still preferred for the vast majority of stocks and, of all the hardwoods, the species of walnut known as "black walnut" (*Juglans nigra*) in this country, provides the best native lumber for the purpose and is the material from which most of the stocks are made.

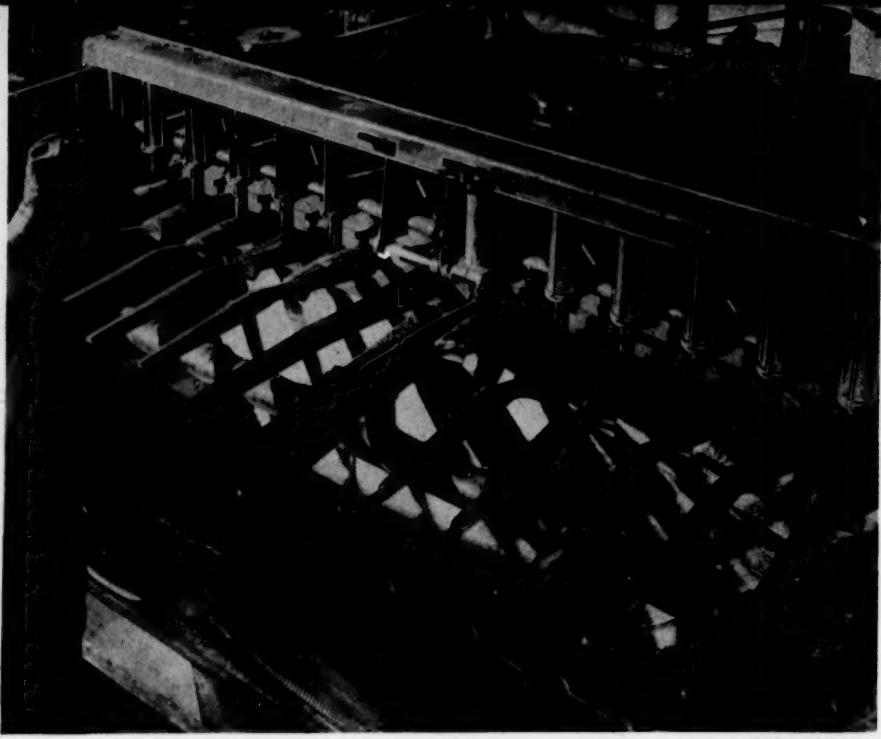
The use of walnut for gunstocks is an old practice. Almost concurrently with the invention of the first firearms, it was found by gunsmiths that walnut trees made the best stocks.

In the great continental wars between England and France, the sup-

ply of the best walnut trees was reduced to the point where both England and France were bidding against each other as high as thousands of dollars for a single tree of exceptional quality. Even today, there are few other woods so tough, light and as strong as walnut, and yet easy to work and relatively free from warp, checks, shakes and splits. (Fig. 1)

Today, black walnut is as popular for sporting rifles as it is for the military. The wood next most commonly used for both types is the white walnut, or "butternut" tree. It has neither the strength nor hardness of the black walnut, but the circumstances of supply and demand in wartime, together with its superiority over most other woods has dictated its use. Outside of both species of walnut, maple is the next most common wood. Its chief asset is strength and, for sporters, attractiveness is taken into consideration. The difficulty of working it is its chief disadvantage, although its light color is a slight disadvantage in military stocks. Birch is also used, but it forms a very small percentage of the total. At the present time, the only military specifications for stocks are: black walnut, white walnut, hard maple, and birch; although experiments are being conducted on pecan, cherry, beech and white ash.

There are other native woods sometimes used for sporters, but they stand no chance of being used for



Rider-Philpott

Fifty per cent loss from log to finished product

the military. The beauty and coloring of their twisted grain makes them desirable for sporters, but this is a negligible factor in military rifles. Besides, twisted grain makes it extremely difficult to control warping, checking and splitting.

These other woods, although not quite as satisfactory as black walnut, have been used because the great demand for black walnut, over the centuries, for fine furniture and military purposes has resulted in a marked decrease in the amount of such wood available today.

One of the problems which must be faced with walnut procurement is the fact that the best walnut comes from poor soil with insufficient moisture. The poor soil and lack of water hinder growth, and the wood fibers get quite dense and tough. Unfortunately, demands of mass-production during war-time move at a faster rate than the trees can grow. If you try to accelerate growth to meet production demands (by controlled planting under good soil and water conditions) you will have a softer, spongier wood.

In the use of walnut for gunstocks, we are faced not only with selecting the proper grades of lumber and the even more difficult problem of finding enough of it, but we must see to it that the wood is properly dried, or seasoned.

Wood as it is cut in the forest is

not ready to be sawed up and used right away. The amount of moisture in green hardwoods may be as much as 100 per cent as compared to its dry, seasoned weight. This moisture must be carefully removed, for as the wood dries it will shrink, but not uniformly. Too rapid drying will result in warping and cracks. To avoid this, the evaporation of water from the surface must not be too much greater than the rate at which the interior will lose its moisture.

Before the invention of forced artificial drying means, wood had to be seasoned by exposure to the atmosphere. What wood is still air-seasoned today generally requires exposure for three to eight months before it is ready to be worked further.

The development of mass-production techniques meant that there had to be an artificial means of quickly seasoning wood. Today, the majority of wood seasoning is done in oven-type kilns in which the humidity and raised temperatures are carefully controlled. These kilns reduce the seasoning time to a matter of some 45 to 55 days, but extreme care must be taken to insure that the lumber doesn't dry too fast and thereby crack.

Another problem encountered in using lumber is the direction of the grain. The resistance of wood to stress is greatest along the grain, but

its tendency to crack is also greatest along the grain. Because of the fact that "quarter-sawed" lumber (Fig. 4) has less of a tendency to crack than "plain-sawed" (Fig. 3), the grain of a stock should run much the same as in Fig. 2. Note that the end of the stock blank, where the butt-plate will be, has the marks of the annual rings running across it at an angle of more than 45 degrees to the long axis of the butt (a distinguishing mark of quarter-sawed lumber).

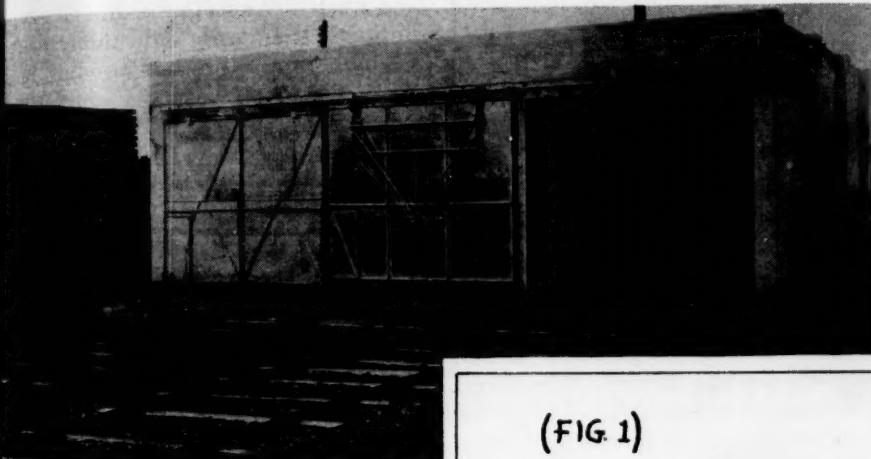
Timber sawed into blanks with the grain running as it should for gunstocks, is called "quarter-sawed" lumber because this type of lumber is made by cutting the log longitudinally into quarters and then slicing wood alternately from each face of the individual quarter of the log. This lumber is rather expensive as compared to lumber made by the more common "plain-sawed" method, where the log is cut up by simply slicing off all boards tangentially. The blue areas in both diagrams (Fig. 3 and Fig. 4) illustrate the amount of waste material typical of each type of lumber. It is easy to see where the greater waste resulting from the quarter-sawed method causes higher costs, because fewer board-feet of lumber are obtained with the same size log. Quarter-sawed costs are also higher because the log must be selectively turned so that the saw cuts off the boards at an angle that will produce the proper grain direction. The wood cells which make up the annual rings are the hardest part of the tree, and that part of the wood between the annual rings (summer and spring growth) is considerably softer and wears at a faster rate than the annual rings. Therefore, the near-perpendicular approach of the annual rings to the surface of the lumber exposes less of the softer wood to wear and abuse.

Plain-sawed lumber, although cheaper, is too apt to crack (Fig. 1). Also, the small angle at which the annual rings meet the surface exposes a lot of the softer wood. Its greater economy is a result of less waste and the fact that the work can be done faster. A few boards in a plain-sawed log may have the grain running as it would if it were quarter-sawed, but there is very little of it. Lumber made from the plain-sawed process is used for general construction purposes where resist-

ance to warping, wear and abuse are not of primary importance.

The great demands on our walnut supply in the past have led some people to fear that our available supply, in the case of all-out war with our most likely enemy, would not carry us through the emergency.

Drying kilns—seasoning in 45 to 55 days



Rider-Philpott

Historically speaking, there is some basis in these fears. In World War I, the demand for walnut lumber was such that the Boy Scouts were out asking people to donate their walnut trees as a patriotic duty.

W. H. B. Smith in *Small Arms of the World* relates, "During World War I, the Germans ran short of the walnut which had originally been used. Substitute woods shrank and warped and proved generally unsatisfactory. Light metal butts were tested early in the 1930's, but were not considered satisfactory. Beech plywood was tried, and eventually a laminated beech stock was evolved. According to official German reports, beech proved more desirable in every way than the original walnut. The laminated beech withstood all field and laboratory tests. It was available in quantity, and factory waste averaged 1.5 to two per cent as against ten per cent for walnut." The author of the previous statement makes a ten per cent factory waste estimate in using walnut lumber. It is not quite clear what steps the author is referring to, but this writer is aware of the fact that the total waste resulting from bark removal, sawdust, trimmings, seasoning loss, remanufacturing loss and miscellaneous causes will vary

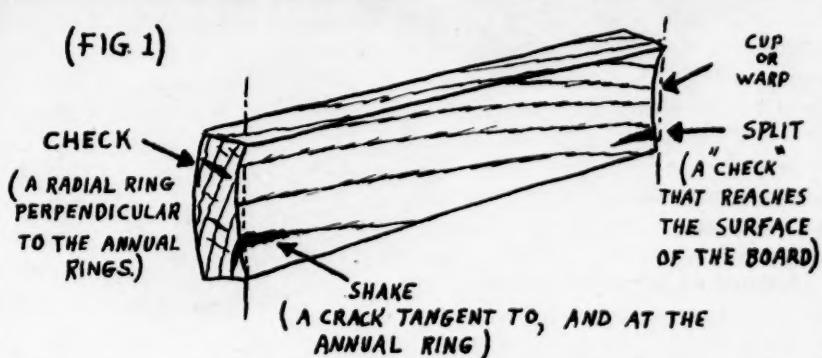
around 50 per cent, from the cutting of the log to the finished product.

Between wars, experiments on stocks continued in the United States, although the scarcity of available funds stunted progress. When World War II broke out, we had designed the M-1 rifle to use walnut

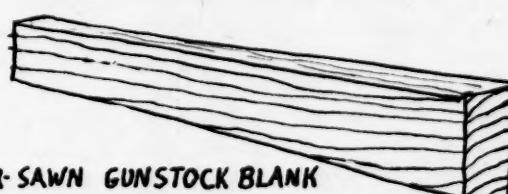
stocks. Apparently, whatever progress had been made in developing a satisfactory substitute was not considered sufficient for us to turn from the walnut.

World War II saw the greatest demand on our walnut supplies that our country has ever seen. In 1943, the American Walnut Manufacturer's Association of Chicago started a national campaign to stimulate walnut tree planting throughout the country, wherever soil and climatic conditions would permit. Other countries were subject to far worse shortages. A look at any collection of foreign weapons from World War II gives one the impression that many of these stocks were made from left-over packing crates.

The increasing scarcity of both walnut species has led to many at-



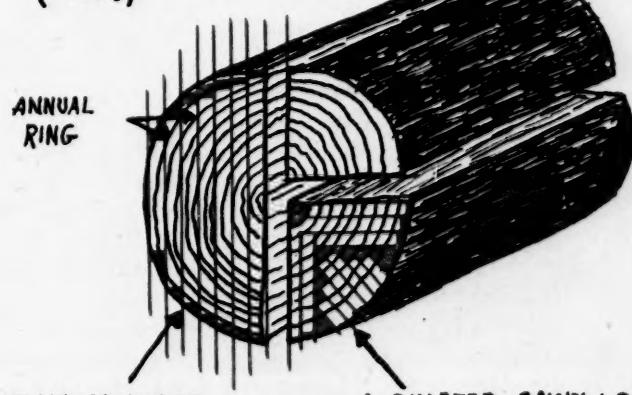
AN ILLUSTRATION OF COMMON WOOD DEFECTS THAT ARE MORE PREVALENT IN PLAIN-SAWN WOOD



(FIG. 2)

A QUARTER-SAWN GUNSTOCK BLANK

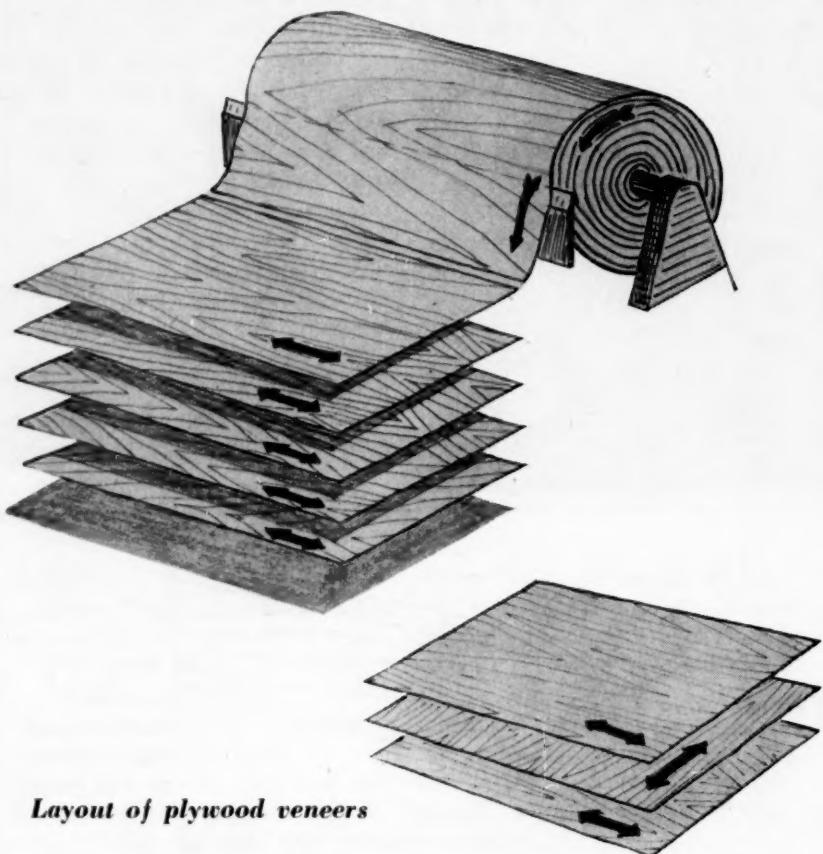
(FIG. 3)



(FIG. 4)

A PLAIN-SAWN LOG A QUARTER-SAWN LOG

Schematic sketch of laminated plies being assembled following the "rotary cut" operation



Layout of plywood veneers

tempts to develop a substitute material. Most other woods are entirely unsatisfactory, except for a few like maple and birch, as has been explained, which are not quite as good. Many foreign countries use wood that is sub-standard from our point of view. Such wood is generally unable to stand wear and tear, but then, their ordnance philosophy may be that most weapons will have a short combat life, so their stocks are made accordingly.

Germany, as has already been mentioned, experimented with light metal stocks, but they proved unsatisfactory. However, even if a successful light-metal stock were developed, the metal needed for it would probably be too scarce for any but high-priority production, such as aircraft.

In World War II the Army experimented with a plastic rifle stock.

Nothing has been announced so far, and the entire project may have been dropped. The idea itself though, is not impractical—a hollowed-out plastic butt has been used on the BAR for some time.

The only materials that have offered any real chance of success as substitutes for black walnut have been plywoods and laminated woods. Germany was satisfied with her laminated stock, and made it a standard item. This country is still experimenting with laminated woods. Our failure to adopt a laminated stock is open to criticism, but it should be mentioned in all fairness to Army Ordnance that the available supplies of walnut in this country have permitted us to be more particular in our standards for a laminated stock.

Laminated wood, like plywood, is basically a product which is formed

of thin plies or veneers of wood, fused together with the aid of a bonding material or glue, heat (sometimes) and considerable pressure. "Plywood" and "laminated wood," however, are not synonymous. In plywood, we find the grain of each ply or veneer running at right angles to the plies on either side of it. This cross-graining greatly reduces the natural tendency of wood to shrink and warp along its grain, and greatly improves the tensile and compressive strength of the finished product in all directions. Laminated wood is a product which has the veneers assembled with the grain in each ply running generally parallel to the other plies. All woods have their compressive and tensile strength *along* the grain, that is, parallel to the fibers. Therefore, we find that a laminated wood has its compressive and tensile strength greatest in one direction, since the grain of each ply will run parallel to the others. Both types of veneered wood (a term we shall use to denote plywood and/or laminated wood) will be found to be free of most of the natural defects of timber.

Past experiments indicate that laminated wood will prove better than plywood for gunstocks. The greatest shocks felt by a rifle stock are usually in one direction, that is, longitudinal shocks when the weapon is fired. Laminated wood would have its greatest strength in that direction, because of running the grain longitudinally. Also, since plywood is cross-grained, it is difficult to machine it on the edges and ends as satisfactorily and smoothly as is required for stocks. The parallel plies and grain of laminated wood enable it to be machined as easily as solid lumber.

By manufacturing logs into "veneered wood," we can utilize the softer woods such as spruce, fir and pine for high-strength requirements, and turn out a product which is superior to hardwood lumber. More plentiful timber can be utilized and we are not restricted as to any one quality of that timber.

The strength of a veneered wood depends to a large degree upon the glue or bonding material. Casein glues are used in the veneers intended for indoor use. They are strong, but not at all moisture resistant. The really remarkable bonds

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are made with plastic bonding materials. "Plastic bonds" are adhesives in the synthetic resin group using various compounds of formaldehyde.

Since World War II, a very high percentage of all commercial veneered wood has been manufactured using synthetic resins. There are other bonding materials, but these plastic bonds seem to have the greatest possibilities for military use and for further developments.

There are certain advantages and disadvantages of both types of stocks—veneered and lumber. Seasoning time with plywoods and laminated woods is almost negligible. When a log is to be made into veneers, it may be peeled by the "rotary method" where a thin, continuous strip is peeled off the rotating log (previously steamed to soften it) by a knife at least as long as the log. Another way is to slice thin veneers from boards produced either by the plain-sawed or the quarter-sawed method. It must be remembered that these plies may be as thin as .01 of an inch. This wood is so thin and flexible that drying it quickly is easy. Seasoning time, and the loss from split and warped lumber is at a minimum. There is also no wastage as a result of sawdust. A quarter-

inch wide saw cutting up a log into one-inch thick boards will produce 20 per cent wastage right there. Opposed to the above advantage of veneered wood, we find that veneered wood requires extra equipment, time and money because of the more complicated manufacturing technique.

Veneered wood is considerably stronger than ordinary lumber and more moisture resistant, but is also heavier. On the other hand, veneered wood has its advantages. Softer woods can be made into first-rate stocks by veneering because the problem of suitable direction for the grain (for strength and to avoid cracking) is eliminated. In addition, further shrinking and swelling because of climatic changes are almost eliminated in plywood, and greatly reduced in laminated wood. Strength is enhanced and moisture resistance improved. Resistance to the absorption of moisture and the consequent distortion through swelling is important when it comes to maintaining a constant zero for the weapon, because distortion of the metal fittings of the weapon will cause a varying point of bullet impact.

What kind of stocks will we find on the new Army Ordnance light-

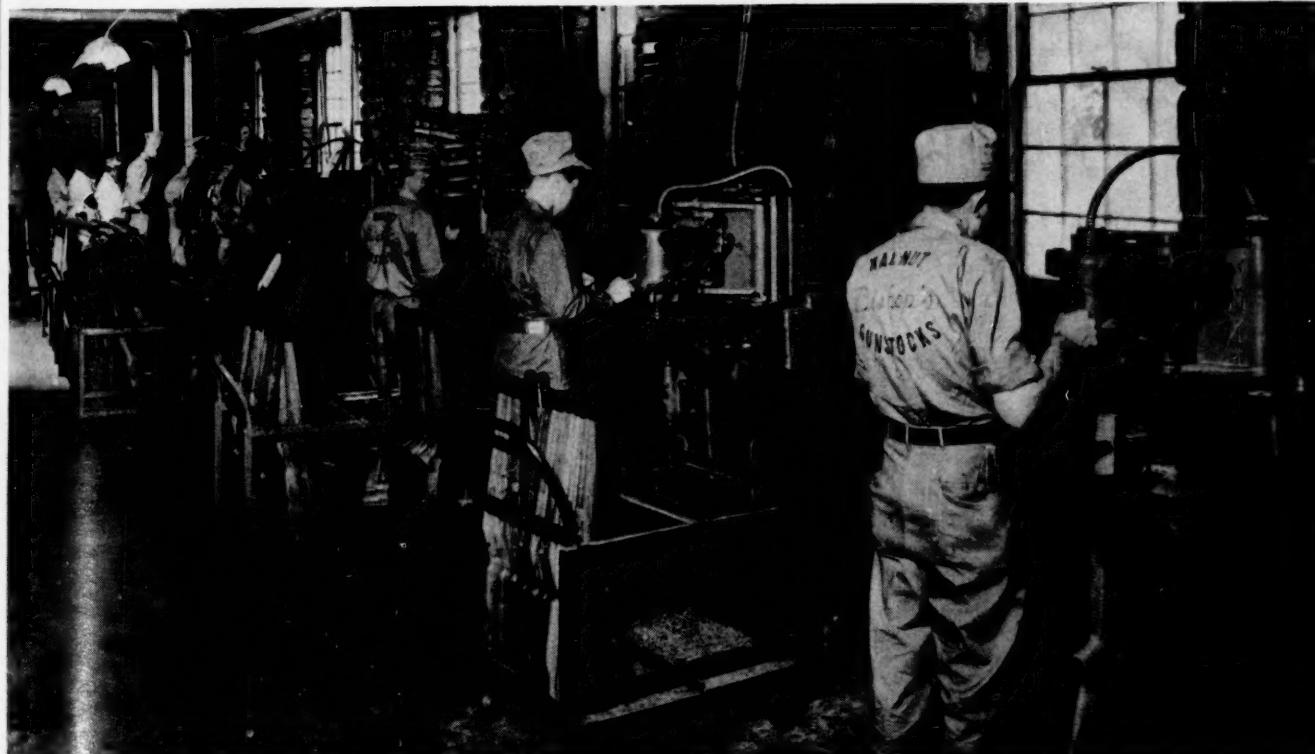
weight, automatic rifles? The Army has two prototypes of lightweight, automatic rifles at present—the T44 and the T47. Tests so far have shown the T47, operating on the basic principle of the BAR, to be a little better than the T44 which operates on the basic principle of the M1 rifle. There is also a new lightweight automatic rifle produced by Fabrique Nationale (Belgian National Factory) which shows promise of being at least as good as the T47.

Army Ordnance finds black walnut preferable in the manufacture of the T44 and the T47, although white walnut has been used to a lesser degree. Ordnance experiments with laminated stocks have not produced a model satisfactory to them, however, research is continuing. The writer has been unable to discover what type of wood is used in the Belgian rifle stock.

If we ever get involved in another all-out war it's hard to tell what they might come up with. But the astronomical demands a third world war would place on our walnut supply, make it almost certain that we would be forced to turn our backs on such high priority material and turn to laminated woods for our gunstocks.

US MC

Rider-Philpott



Stocks can be mass-produced, but it takes years to grow material

THE



By LtCdr Trevor Blore, RNVR

Britain's helicopter section may be small and financially restricted, but it has packed a lot of experience into a brief existence and is moving on to new fields

THE QUEEN'S 'COPTERS

COMMUNIST GUERRILLAS LURKING in the dense jungles of Malaya have heard a new and ominous note from the skies this past year.

Peering from the thick undergrowth, which completely hides a man from sight two or three paces away, they have seen their ungainly new enemies clattering down to hover over their hideouts in some remote and tiny jungle clearing.

And they have soon learned that a visit from one of these strange new aircraft, with its noisy umbrella-like rotor and whirling tail propeller, often means a follow-up—usually by several of these sky monsters carrying skilled, jungle infantry squads.

The arrival from Britain of the Royal Navy's first operational helicopters in Malaya has brought some very valuable innovations to this weird twilight war against Communism. For more than five years it has been waged in the thousands of square miles of almost trackless, vine-laced forests of Malaya.

It is also the first time that any of Britain's fighting services have used helicopters in a tactical role—reconnaissance, moving infantry and sup-

plies for quick deployment in remote operations, and evacuating wounded and sick from hitherto inaccessible points.

Malaya has not provided the grand-scale, spectacular operations of Korea. It has been the hunt-the-needle-in-the-haystack war ranging over the rugged and strategically key sector of the free world where the Kremlin decided to strike first. Yet here a few score of thousands of armed bandits, mainly Chinese divided into small, elusive groups, have proved more difficult to deal with than the bugle-blowing Chinese hordes of Korea.

The Communists do not stand and fight. Year after year they have waged a campaign of ambush, terrorism, sabotage and the slaughter of defenseless civilians, with one of their major aims the smashing of the economy of the Malayan peninsula, based on rubber and tin production.

About the nearest thing to straight warfare in this prolonged struggle has been "Operation Springtide" in December, 1951. Troops of 3d Commando Brigade, Royal Marines, carried out a tricky campaign against

particular active and well organized enemy Independent Platoons in the wilds of Central Perak. They disorganized the Communists' food supply and contacts with subversive elements among the terrorized civilian population.

In Malaya, the denial of supplies to the Communists has proved of even greater importance than the slow, difficult campaign of extermination.

Until the beginning of 1953 the ground forces—English infantry with a high percentage of two-year National Servicemen (two-year conscripts), Royal Marine Commandos, natural jungle fighting troops from Fiji, Malayan police and Dyak trackers from Borneo—have lacked one important instrument of support: helicopters capable of real tactical cooperation.

There were a handful of helicopters of the Far East Casualty Evacuation Flight to lift wounded from inaccessible jungle clearings, but all other air cooperation was carried out by more conventional aircraft.

Medium bombers and fighter-



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Flood rescue work in Holland . . .

bombers—both piston and jet machines—carried out thousands of air strikes against obscure Communist targets in that ocean of jungle. Dakotas of the Royal Air Force and Royal Australian Air Force made supply drops under the most hazardous of conditions, in which a crack-up was almost a death sentence, and a squadron of tiny, slow-flying Auster aircraft, based on various air strips throughout the country, carried out reconnaissance and communication duties.

But towards the end of 1952 Britain received from the United States, under the Mutual Defense Assistance Program, a valuable allocation—ten large Sikorsky helicopters.

These went to the Royal Navy as the pioneers of British helicopters. Until this time, the Navy had only one helicopter squadron for training and trial. It was equipped with the smaller Dragonfly, suited to air-sea rescue work, communications, photography and other fleet requirements, but hardly capable of tactical cooperation with ground forces.

With the new and larger Sikorskys, the Navy formed its first operational squadron No. 848 in November 1952, and the following month, under LtCdr Sydney H. Suthers, DSC, RN, it was on its way to Malaya aboard an aircraft carrier.

The Squadron flew ashore at Singapore on January 8, 1953 and lost no time in getting into action against the Communists in the adjacent Federation of Malaya.

Although these ten machines could give no such spectacular demonstrations of mass air lifts as American helicopters have given in Korea, it is doubtful whether any other helicopter squadron in the world has had such concentrated and continuous experience of close cooperation with infantry under operational conditions as No. 848 Squadron has piled up in a few months.

Between arrival on January 8 and June 1, the Squadron, keeping seven of the ten American machines constantly flying, carried more than 4,000 troops on operational lifts, and moved 100,000 pounds of freight in 1,500 flying hours.

These Sikorsky machines, capable of carrying ten people, have indeed proved their worth in a tactical role under the most difficult tropical jungle conditions. For naval air navigators the trackless wastes of jungle in Malaya present much the same problems as the blind spaces of the sea.

One of the more obvious roles of 848 Squadron has been the evacuation of casualties, and in the first few months they carried 90 men from jungle clearings to military hospitals over terrain in which it would otherwise have taken days or even weeks to get them back.

Even as the Squadron was working up at the Naval Air Station of Sembawang, on its arrival it had its first casualty evacuation call and lifted three soldiers to a hospital.

Leaflet dropping at small kam-

pons and areas where it is known that Communist terrorists are active is another task now performed by helicopter. One pilot of the Squadron released 700,000 leaflets in two hours over terrorist-infested territory.

And when Army Intelligence wants close reconnaissance of some suspicious jungle area, a telephone call to the naval helicopter squadron will soon supply the answers. These noisy, hovering machines can provide so much more detailed and accurate observation of a point in the great sea of jungle than either the slow-flying little Austers or air photographs.

But the major and most important task tackled by the Squadron has been the movement of troops. In one quick deployment of troops on operations last May, some 1,800 men were moved in four days.

In another operation when helicopters were used for positioning troops, the Squadron flew 183 sorties of 103 hours to move 650 troops and upwards of 4,000 pounds of freight and equipment.

In the same month, four helicopters lifted 205 fully equipped troops to seven different jungle clearings in 51 sorties of 53 flying hours, and in another phase of the same operation 310 soldiers and 2,000 pounds of freight were lifted to patrol positions.

Of course, the infantry still have to hack their way yard by yard through miles of jungle on local patrol, but the helicopters have given the soldiers a new advantage in surprise and striking power, as the Communists have learned to their heavy cost in the past year.

Just to complete their role as maids-of-all-work, the naval helicopters have provided a rapid, efficient method of travel for senior officials in Malaya. The High Commissioner, General Sir Gerald Temples, has employed them for tours on two occasions, and senior military officers find them invaluable for quick inspection flights to remote but vital areas.

Although starting way behind the Americans in this field of the hoverplane, and handicapped by the post-war economic stringencies of Britain, the Royal Navy has obviously made good progress in ten years.

It was only in 1943 that the

Admiralty began to take an interest in helicopters. A few pilots were sent to the United States for training, and the Navy's first American helicopters were tried out on such duties as photography, radar calibration and communications.

THE FIRST TIME a British naval helicopter came to public attention was in February, 1947. Then, as the battleship *Vanguard* steamed southwards taking the late King George VI to visit South Africa, Lieutenant Ken Reed (now a test pilot for one of the United Kingdom firms developing helicopters) landed his little Dragonfly on the quarterdeck of the battleship with only inches to spare, to deliver the Royal Mail.

It was in that year the Royal Navy formed its first helicopter squadron — No. 705.

Quite by chance, while making a film about naval training, I found this Cinderella unit tucked away in a corner of a hangar at the Royal Naval Air Station of Gosport, just outside the great naval base of Portsmouth.

Enthusiastic Lieutenant Ken Reed was then the Navy's helicopter kingpin. To the best of my memory he had three S-51 Dragonflies and some strange odds and ends of equipment. One of his museum pieces was a war trophy, a German man-carrying kite which U-boats used to trail for observation work.

His handful of young enthusiasts then thought mainly in terms of air-sea rescue work, and perhaps submarine spotting, but hardly of tactical cooperation with infantry.

Reed's favorite pipe dream was a helicopter which would rise vertically, house its rotor and switch to high speed jets or turbo-prop motors.

Next step in the Navy's employment of helicopters came in January, 1950, when the still solitary 705 Squadron was re-equipped with English-made Dragonflies—the American machine made under licence in Britain by the Westland firm. These were specially designed for rescue work, with photographic and communications duties as a sideline.

Then, thanks to the allocation of the bigger Sikorsky aircraft under the Mutual Defense Assistance Program in 1952, there came into being the Navy's second helicopter squadron and its first operational one. So

1953 became a big year for helicopters in the United Kingdom.

What a change from 1947! At the Naval Air Station at Gosport half a dozen Dragonflies bumbled around the skies on training flights, while half a dozen more of the bigger American Sikorsky HO4S3 helicopters, newly arrived, were lined up on the tarmac facing the hutted headquarters of a second newly-formed squadron — No. 706.

At present there are three naval helicopter squadrons: No. 705 Squadron, for training and trials, now equipped with five American Hillers (HTE 2) and eight Westland-Sikorsky Dragonflies (S-51); No. 848 Squadron in Malaya; and No. 706 Squadron, newly-formed with eight HO4S3 machines which will be used for trials in anti-submarine tactics. In addition, each aircraft carrier and every major naval air station ashore has two Dragonflies for rescue work.

While they prepare for their tactical experiments, the pilots of the new 706 Squadron regard their new machines as potential flying radar and Asdic (Anti-submarine detection and identification) stations, extend-

ing by miles the ability of a fleet to detect either surfaced or submerged submarines in its area.

Lieutenant Commander H.R. Spedding, Commanding Officer of 705 Squadron, and his four instructors "convert" experienced naval pilots to helicopter flying at the rate of four a month. The squadron also maintains one helicopter always at the ready for sea rescue operations, and must be prepared to fulfill any special communications, photographic or general fleet requirement mission.

As an additional duty, Commander Spedding was busy on the day of my visit test-flying the new helicopters from the United States.

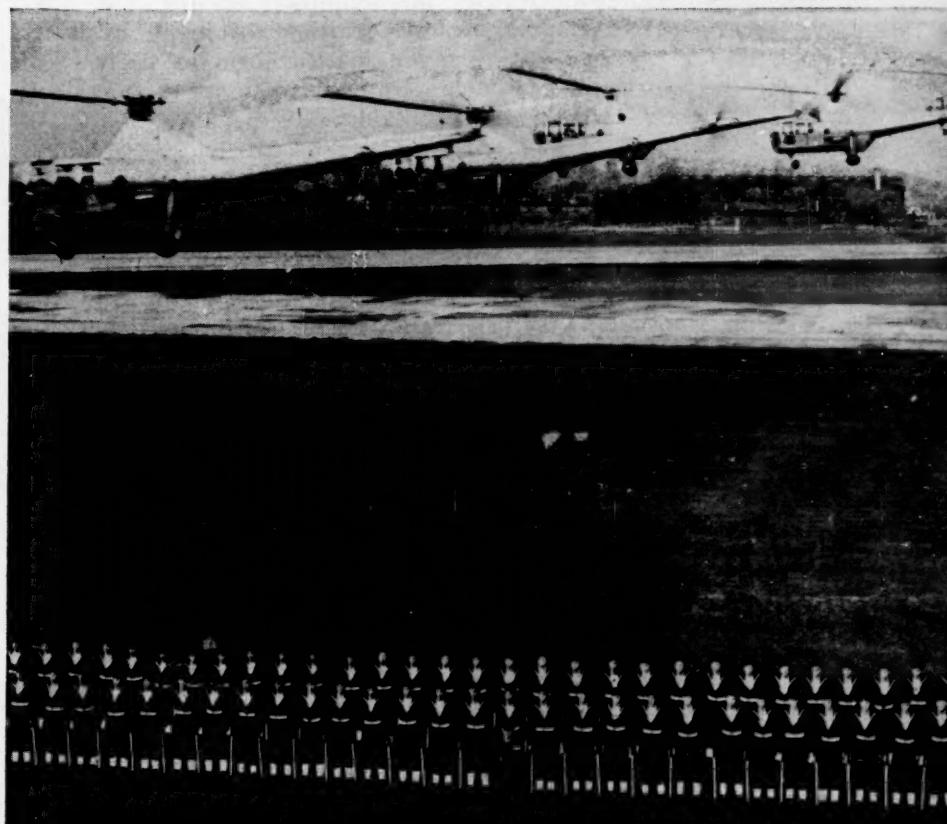
But life is not all plain slogging for Commander Spedding and his Squadron. They have their big moments. When Holland was devastated by floods in February, 1953 it was 705 Squadron which went to the rescue with nine machines.

It was 705 Squadron which had the honor of leading the fly-past of several hundred naval aircraft at the Coronation Review at Spithead by Queen Elizabeth II.

The Squadron also had fun "play-

... or a review for the Queen

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Moving troops in a hunt-the-needle war . . .

ing" with the Royal Marines in the annual "Operation Runaground" last summer, getting a small taste of the tactical experience which 848 Squadron has been developing in Malaya.

This exercise, now annual, is one in which the Royal Marines show their amphibious paces, particularly as Commando raiders and handlers of landing craft. So 705 Squadron joined in for landing key beachhead personnel, evacuating imaginary casualties and communications duties. Both the Marines and the helicopter men thoroughly enjoyed the experience.

Commander Spedding also came into the public eye when he flew a helicopter which landed on the lawn at Buckingham Palace, in the heart of London, and took the Duke of Edinburgh to an official engagement.

It was the Dutch floods, however, which really showed the versatility and powers of on-the-spot improvisation of 705 Squadron. Nine naval helicopters answered the Dutch call, and, apart from one Dutch naval Dragonfly and one Bell helicopter of the Belgian Sabena airline, were the first of their kind on the spot.

Flying through rough wintry weather, including snow squalls, they carried radio operators, equipment and supplies to isolated spots. Then they searched for people in distress and hoisted them to safety. Seats were removed from the backs of the aircraft and the space filled with rubber sea boats and bread for the flood sufferers.

On the outward flights, medical supplies, doctors and dyke engineers were carried to the disaster areas, and marooned people brought back. Old people suffering from shock and exposure were flown direct to the hospital. On one day a whole village was evacuated, well over 200 people being carried in groups of four to six.

After a week of hard rescue work the need for this type of duty had passed. Then Commander Spedding had the honor of flying Prince Bernhard of the Netherlands on a tour of calls to damaged villages. The following day two aircraft flew Queen Juliana and her entourage on a similar tour.

The English helicopter party subsequently flew to the Queen's Palace and landed on a nearby football field

to be received by Her Majesty.

Some new techniques were evolved to meet the circumstances. For instance, useless telephone wires which impeded landings were broken down by squatting the helicopter down on them. Altogether, it was an interesting exercise in initiative and improvisation.

The helicopter section of Britain's Fleet Air Arm may be small and financially restricted, but it has packed a lot of experience into a brief existence, and is now moving on to new fields.

And, although the Navy is most grateful to the United States for the machines supplied so generously to this enterprising little force, it is looking eagerly to United Kingdom aircraft firms to supply future requirements.

Several firms are working on hoverplane development—Westland (which has long built the Sikorsky Dragonfly under license) Bristol, Saunders-Roe, Fairey and Percival. A few of these firms showed their initial productions at the 1953 show of the Society of British Aircraft Constructors, including one machine with jets on the tips of the rotor.

These firms are looking first to the Royal Navy for the orders which will enable Britain to forge ahead in this field of aircraft construction, where the Americans have shown the way both with aircraft and generous cooperation.

USMC

British Info Services



. . . or casualty evac

ECONOMY IN WRITING

Marines won't care whether it's literary or not, they want to be able to understand it



By Col W. F. Prickett

ECONOMY IS THE WATCHWORD OF the nation at present. The entire population is concerned with the ever-increasing tax load. The workload of the unit seems to be ever on the increase, but the manpower-management studies continually slice the T/O.

G-1 laughs when additional personnel are requested and the only justification for such requests is that a new function has been assigned. Fitness report markings are required

in "Economy in Management" as well as the old familiar categories. Motion studies are conducted. Work measurement investigations are held. With all this energy directed to economy, nothing has been said about economy in official writing.

Enough man-hours can be saved by practicing economy in writing to take the pressure off the Marine Corps, enable our overworked personnel to get their 30 days leave and in addition, spend two weeks on the

rifle range each year.

The one most important rule in practicing economy in writing is: *write only necessary directives*. A look into the files of most any organization will disclose many routine orders. When the question, "Are these orders necessary?" is asked, the song writer of a decade ago who wrote, *No, No, A Thousand Times No*, provides the answer. Staff officers are using up reams of paper and hours of valuable time daily to write

and publish orders which are contained in directives from higher echelon. The worst offenders are those who start the order with "Reference (a) is quoted for information and compliance." These orders are entirely unnecessary! An order put out by division applies to every battalion and company in the division. Regiment and battalion should not put out the same instructions!

At present, a staff job is called a desk job and rightly so, because an alarmingly large percentage of staff officers never leave their desks. Yet the definition (in the Staff Manual of the duties of every staff job) uses the word "supervises" repeatedly. Can supervision be accomplished by written instructions? Again, the song writer had the answer.

A great many individuals (remember Distribution: "A," "B," & "C"?) are required to read every order published. Their reading time must be added to the overall loss of man-hours resulting from unnecessary written instructions. No one can afford not to read an order, it might possibly be necessary and applicable.

Practice economy in writing. Don't publish an order which quotes the Marine Corps Manual, Marine Corps Routine Orders, or other directives of higher headquarters.

Take a look at figure 1. Was that memorandum necessary? Incidentally, figure 1 is a true copy of an order in the active files of a Marine Corps organization. In a way, you could make out a pretty good cause for this memo. Evidently a great many discrepancies existed and some positive measures had to be taken to correct them. Putting it in writing was a pretty good solution even if it wasn't the school solution.

However, that sort of reasoning is starting in the middle of the matter. Discrepancies in great numbers don't happen all at once; they accumulate. Proper supervision would have kept the errors down to a paltry few.

Have you ever heard, via the grapevine, of someone getting complimented? Not often if at all. But, sit down in any coffee mess for a few minutes and listen to the tales of so-and-so getting chewed out by the Old Man. That sort of news really gets around!

If the commander lets it be known that he expects the book to be fol-

Subj: Penalty envelopes, Improperly prepared for injection into the U. S. Mails
Ref: (a) ALNAV 175
(b) ALNAV 87

1. It is noted that some commanding officers within this command are not complying with instructions contained in references (a) and (b).
2. Each commanding officer having official correspondence intended for injection into the U. S. Mails is directed to take necessary measures immediately to insure that the instructions contained in references (a) and (b) are complied with.
3. The most common violations of these instructions are:
a. Use of penalty envelopes for air mail.
b. Use of plain envelopes without the penalty indicia for ordinary official mail.
c. Use of penalty envelopes for personal mail.
d. Use of penalty envelopes with the wording "NAVY DEPARTMENT" and "Official Business" stamped on with a rubber stamp, typewritten or written by hand.

Distribution: "B" & "C"

FIGURE 1

lowed and sends his staff out to see that it is, those superfluous routing orders won't be needed.

The second rule in practicing economy in writing is: *make all directives easy to read and to understand*. The files of most military units are replete with correspondence directing attention to instructions which have not been carried out. There are some cases of neglect. However, the majority of this correspondence is the result of misunderstanding. Who is at fault, the writer of the directive or the reader?

Writing is the art of setting down symbols which represent words. Words, in turn, express ideas. Writing then, is conveying ideas on paper to people with whom the writer cannot talk. In other words, writing is talking on paper.

All of us can talk and all of us can write. Someone is credited with saying that if an order could be misunderstood, it would be misunderstood. If the directive is misinterpreted, the writer has failed to convey his ideas and therefore the fault is his.

To write an easily understood di-

rective, we must use our *speaking* vocabulary. For some reason, when the majority of us start to write, we invariably employ our *reading* vocabulary. Immediately, there arises a conflict.

There are those individuals who are capable of writing in such a way that their product can be classed as literature, yet it can be understood by anyone. They are indeed fortunate, and so are their readers. But in most cases those who write in such a manner are earning their bread and butter with their pens.

Many Marines are also earning their pay with their pens by writing directives. However, those Marines are chosen for their jobs because of their knowledge of Marine Corps matters and not because of their ability to write. This is as it should be.

Marine officers spend at least half of their time as junior officers in teaching others. Their service records reflect their success as teachers, and those with the best records have done sterling jobs as instructors. Therefore, they must have the ability

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Subj: Maintenance personnel, request for
Ref: (a) CMC SpdLtr AFA-1914-jrf of 7 Apr 1953
(b) CMC SpdLtr AFA-1914-jrf of 17 Aug 1953

1. Reference (a) was canceled and superceded by reference (b).
2. In view of the delay incident to the revision of the Table of Organization for Inspector-Instructor staffs, further delay in submission of such requests is not desirable. Accordingly in cases where maintenance personnel are urgently needed and no other workable solution is available, Inspector-Instructors will prepare requests in accordance with previous directives and forward to this headquarters for consideration and submission to Headquarters, Marine Corps.
3. As a critical personnel situation will exist in the Marine Corps during Fiscal Year 1954 due to strength limitations and personnel availability, compensating reductions must be submitted for all recommended increases in maintenance personnel.
4. Inspector-Instructors are requested to reaffirm or resubmit those requests previously forwarded to this headquarters on which action has not been taken.

Subj: Maintenance personnel, request for
Ref: (a) CMC SpdLtr AFA-1914-jrf of 7 Apr 1953
(b) CMC SpdLtr AFA-1914-jrf of 17 Aug 1953

1. Reference (a) cancels reference (b) and authorizes requisitions for maintenance personnel provided corresponding reductions in other personnel accompany the requisition. In other words, we can trade a clerk for a plumber. Previously submitted requests for maintenance personnel will not be acted on.

to express themselves with words in speech. Why not in writing?

Our reading vocabularies are filled with words which we do not find it necessary to use in everyday conversation. We are able to convey our ideas without their use daily. Then too, our reading vocabularies understand many little used meanings of familiar words. For example, "implement" is a noun in our speaking vocabulary. However, "implement" is a verb (and an overworked one at that) in our reading vocabulary and all written directives.

Compare figures 2 and 3. Which is better? Obviously, figure 3 is not very literary but it is certainly understandable and only half as long as figure 2. Isn't figure 3 an economical

directive and figure 2 an uneconomical one?

Economy in writing is a two-edged sword. One edge conserves the writers' time and the other saves the readers'. Obviously one page takes less time to read and less time to produce than two. Not so obvious is the saving in time required to understand and go to work on the instructions contained in an order.

Recently an officer upon being assigned to a new billet, immediately familiarized himself with effective directives of the next higher headquarters. A few days later this officer called attention to a violation of one of the higher echelon orders. The man responsible for the mistake did not believe it was a violation of

the directive. Finally, after a three hour conference, during which all references and parallel directives were searched, a phone call was made to the officer who drafted the controversial document. He upheld the new officer's interpretation and directed that all work which had been completed (the directive was six months old) be corrected.

It was then discovered that all subordinate echelons had also misinterpreted the paper in question and they too would have to correct all previous work. An unnecessary work-load was created because the writer of the directive had used his reading vocabulary instead of his speaking vocabulary. The reader, no doubt, knows of and can cite many similar instances.

The staff officer who supervises by written instructions has devised ways to increase the length of his directives. What is "strictly enforcing?" Either something is enforced or it isn't. The latest is "conclusively justified." Why should a directive say, "It is directed that commanding officers take immediate steps to implement the necessary policies to correct the above listed deficiencies. Full and complete reports of actions instituted and initiated will be made to this headquarters on completion of the action herein directed. In no case will reports be submitted later than 10 November," when it could say, merely, "Correct these deficiencies and report not later than 10 November?" Why should something be "hereby revoked and superseded," "contained therein," "rigidly practiced," or "strictly forbidden?" Let the words stand on their known meanings.

When writing a directive, imagine that you are telling the most backward man in the Marine Corps what you want done. Use simple words and short sentences. Make sure the dullest man can easily understand what you are trying to say on the paper. The Marines reading your directive won't care whether it is literary or not. They want to be able to understand it.

Practice economy in writing by putting out only those directives that are necessary, and by insuring that the directives you put out are readable and easily understood. Do those two things and you'll always be fat for personnel.

USMC

passing in review

The "Big" Plan . . .

STRATEGY FOR THE WEST—Marshal of the Royal Air Force Sir John Slessor, G.C.B., M.C. 180 pages. New York: William Morrow and Company. \$3.00

Strategy has taken on an ever broader meaning as the realization of the true impact of a total War between Communism and the Free World becomes more clearly apparent. We cannot think in terms of the Army, Navy or Air Force having a true strategic plan. Nor can we be content, if the Administration has a presumably complete plan. Careful consideration must be given to all the nations and peoples of the free world, not necessarily for what they may contribute directly to our strength, but for what their control by the enemy would mean in the showdown struggle.

This compact, but hard-hitting, volume of only 180 pages is divided into six chapters, dated 20 January 1954, and a Postscript of 12 March. The contents prove as timely as the dates. The author discusses in both philosophical logic and in practical terms, the meanings and effects of total war in the thermo-nuclear weapon age; the subject of what our strategic aims should be; and the factors to be considered in the economic, political and psychological warfare in which we are even now engaged. The proposals for dealing with "more Koreas" bear a very strong look in light of the current situation in Indo-China and should be very carefully studied by Marines.

The complexion of the armed force requirement of the West is astutely studied. Armies, navies and air forces are scrutinized for their capabilities and limitations. The author should be expected to argue a strong case for atomic air power which he does. He considers all elements of air power; the striking force, tactical air, air defense, logistic support and small war air power; both now and

with the advent of guided missiles. His most concrete proposal for dealing with the thorn in the sides of both the free world and of communism, goes into the diplomacy, economics and sociology of the problem more deeply than is normally expected of most military writers and planners. This chapter could very well stand alone both as a complete volume and as an international plan.

It will readily be appreciated that the subject matter, even in so short a volume, is not easy reading—each thought is too important. So intense is the Marshal's feeling, and so urgent is the problem that he does not allow the reader to miss his point by trusting to memory of a few prior pages. Each idea is subjected to a continuing buildup and analysis, which sometimes beclouds the major theme of the particular chapter. Generous reference to the table of contents, which is really an outline of the book, is highly recommended as an aid to reading with understanding.

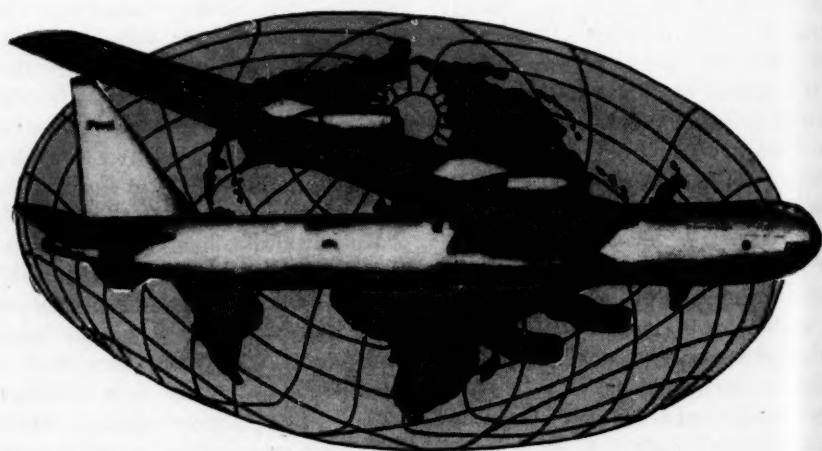
No one man, much less than no one nation, can even aspire to arrive at the solution. Americans, French-

men, Germans and even some Britons (acknowledged by the author) will not necessarily accept all the predication and conclusions presented. Army strategists the world around will voice objections to much of the reasoning under the treatment of ground power. Fleet commanders and Naval aviators on both sides of the Atlantic will certainly exorcise the author's assessment of the navies' role in small and large wars, and will even question his statistics on anti-submarine and anti-shipping scores in World War II. U. S. Marines will rise to defend the future of amphibious landings.

But where the analysis is certainly not absolutely correct in every detail, it also is not hopelessly awry. It should be carefully digested by everyone charged with decisions (political, economic and military) which are being made, or being projected, in the vast struggle now and for the foreseeable future.

If we cannot withstand our own scrutiny, how can we withstand that of the coldly impersonal enemy and of the vast millions of the world who look to the major powers of the West for leadership out of the abyss.

Reviewed by LtCol E. A. Dueber



Another Mark Clark Journal . . .

FROM THE DANUBE TO THE YALU
—Gen Mark Clark, USA. 330 pages.
Illustrated. New York: Harper and
Brothers. \$5.00

The time for decision in Korea was the day the Chinese Communist Government threw its legions into the fighting. The North Korean People's Army was in rout, no longer an effective fighting force. The brilliant amphibious attack at Inchon had sealed the fate of the North Koreans, and units of the United Nations Army had already reached the Yalu on the East, while others were but a few miles away on the West.

Even though there was a danger of spreading the conflagration to world war proportions, it was inconceivable to the author, as it was to General MacArthur, that the United States did not announce to the world that unless these Chinese troops were immediately withdrawn, we would consider ourselves officially at war with Red China and would hurl our air might at her most vital installations regardless of location. It was beyond Mark Clark's comprehension that the United States would countenance a situation in which Chinese soldiers killed American youths in formal, organized warfare, and not retaliate with all the power at its command.

From the Danube to the Yalu is a detailed and human account of Mark Clark's frustrations, both military and political, as commander of all United Nations Forces pitted against the Communist hordes, in what he describes as "the war we might have won." Between the covers of this book is the shameful story of the Koje Island mutiny, details of how American prisoners were treated in Communist prison camps, the manpower shortage which continually plagued the UN commanders during the conduct of the Korean War, descriptions of Operation Little Switch and Big Switch and finally the delicate negotiations which ended in armistice. Here too can be found General Clark's experiences with Syngman Rhee . . . a man with an indomitable determination to free his country, but also one who General Clark found to be one of the most exasperating

allies that anyone could have.

The reader will find the author's views on the political problems of the Far East area. United Nations Command and Communist proposals submitted during April and May of 1953, and the Armistice Agreement are included in an Appendix.

From the Danube to the Yalu is a well organized, fast moving, historical narrative, written by a man who has seen the face of the enemy, both in Europe and in Korea, and recognizes him for what he is. Peace, says the author, will be granted us only if we are strong, if the Russians and their followers know we are strong, if they are convinced that we have the determination and courage to achieve a *military victory* the next time we are called to war against communism.

Reviewed by Major G. P. Averill

Escape Inc. . . .

MEN OF COLDITZ—P. R. Reid. 287 pages. Philadelphia and New York: J. B. Lippincott Co. \$3.95

Men of Colditz is a sequel to the author's best seller, *The Colditz Story*. It relates in detail the activities of officer prisoners of war who have escaped from lesser German PW Camps and were transferred to Colditz Castle for safekeeping. The story covers the period from November 1952 to April 1945 when the captives were liberated by the American First Army. Colditz Castle was located in Saxony and was considered to be escape-proof. The prisoner contingent consisted of English, French, Belgian, Dutch and Polish officers, plus a few American officers captured late in 1944 and early 1945. Colditz inmates did not accept the escape-proof theory and divided their time between harassing the guards, and planning and executing escape attempts.

The reader proceeds from one tense situation to another as one escape attempt after another blossoms and succeeds, fails completely, or gains for the escapees a few hours of freedom before recapture. Some of the escape plans are ingenious; some are fantastic, but all of them display an extraordinary amount of study and engineering skill. The author depicts elaborate escape attempts superbly planned and timed

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with split-second exactness.

Early in 1944, it became apparent that Colditz captives were to be used by Hitler as hostages in the event the war went against him. This caused the guards to become less strict in their treatment of the prisoners who, being aware of their change in status and having no intention of becoming hostages, stepped-up their harassing and escape activities.

The author, P. R. Reid, a British Ammunition Liaison Officer in

France at the outbreak of World War II, was captured in May 1940 after only 17 days of fighting. His experience from that point until his transfer to Colditz Castle, is covered in his first book. Mr. Reid collected most of the material for *Men of Colditz* from those he left behind when he escaped from the Castle in 1942. Not having taken part in most of the experiences recorded, he was able to elaborate on the individual heroic action of participants.

Reviewed by Captain W. T. Grimes

The Iron Duke . . .

WELLINGTON AND HIS ARMY—Godfrey Davies. 154 pages. Illustrated. Oxford: A. R. Mowbray and Co. \$3.00

Wellington and His Army is not a study of military operations. The book presents to the reader the character of Wellington's subordinates and their commander's opinion of them in the course of life on the march, in camp and on the battlefield. Further, Mr. Davies draws a very fine picture of what Wellington's officers and men thought of the "Iron Duke." The picture Mr. Davies presents differs from the characterization which has generally been held of Wellington.

The work covers the year Wellington and his Army campaigned in Portugal and Spain. It deals in some length with the life of the private soldier in the British Army of that day, of the amusements and recreation of the officers and men, of the women who accompanied the army and the life they led, and the problems faced by Wellington with the management and internal economy of his army.

It is a fine little book of interest to the general reader as well as the military student.

Reviewed by Lt. Col. R. K. McClelland

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